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By Sir Henry Slesser

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THE NATURE OF BEING · AN ESSAY IN ONTOLOGY

BY

HENRY H. SLESSER

OF THE INNER TEMPLE, BARRISTER-AT-LAW

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CONTENTS

PAGE

INTRODUCTION . . . . . .

PART I.—METHOD

CHAPTER I

ON WORDS: INTRODUCTORY—THE NOUN—THE VERB—THE ADVERB—THE ADJECTIVE—THE ADJECTIVAL NOUN—PRONOUNS AND PARTICLES—CONCLUSION . . 11

CHAPTER II

ON SENSUAL STATEMENT: INTRODUCTORY—EMPIRICAL STATEMENT — THEORETICAL STATEMENT — INTELLECTION — PERSONALITY—CONCLUSION 32

CHAPTER III

ON FORMAL STATEMENT: INTRODUCTORY — NATURE OF THOUGHT—NECESSITIES OF THOUGHT—CONCLUSION . 61

CHAPTER IV

ON METAPHYSICAL STATEMENT: INTRODUCTORY—RELIGIOUS TRUTH—PHILOSOPHIC TRUTH—CONCLUSION . . 79

PART II.—DATA

INTRODUCTORY: CONTINGENT ASPECT OF SENSE DATA—THE UNPERCEIVED—THE MOLECULE—THE ATOM—THE SUB-ATOM — ETHER—THE CELLULAR — MAMMALIA — CONCLUSION 103

PART III.—BEING

CHAPTER I

PAGE

ON SUBSTANCE: INTRODUCTORY—SUBSTANCE AS CONTINGENT—SUBSTANCE AS A NECESSITY OF THOUGHT—SUBSTANCE AS NOUMENON—SUBSTANCE AS PHENOMENON—CONCLUSION 129

CHAPTER II

ON WILL: INTRODUCTORY—WILL AS CONTINGENT—WILL AND THE LOGICAL—WILL AS A NECESSITY OF THOUGHT—CONCLUSION 144

CHAPTER III

ON THE KNOWER: INTRODUCTORY—ETHER—EVOLUTION—THE SUB-ATOM AS SELF—THE ATOM AS SELF—THE MOLECULE AS SELF—THE CELL AS SELF—THE KNOWER—THE KNOWER AND THE SOCIAL GOOD—THE KNOWER AND WILL—THE KNOWER AND THE BEAUTIFUL—THE KNOWER AND THE GOOD—THE KNOWER AND THE TRUE—CONCLUSION 164

PART IV.—CONCLUSION

INTRODUCTORY — METHOD — DATA — THE FINAL DUALISM—KNOWLEDGE AND BEING 197

INDEX 221

INTRODUCTION

It is a commonplace that Ontology is discredited and that all attempts to pass beyond the confines of Knowledge in philosophic enquiry are suspect.

To attempt here to justify so perilous a departure from metaphysical convention as to assume Being beyond Knowledge would be to write this book in the Introduction, a course which is not to be encouraged.

In the First Part of this essay the method of metaphysical statement is discussed. Part Three is devoted to Being—the predication of the Data of possible knowledge, which Data are considered in the Second Part, while, in the Fourth Part, the conclusions which have been drawn from the earlier portions are summarized.

PART I

METHOD

THE NATURE OF BEING

CHAPTER I

ON WORDS

INTRODUCTORY:

It is the purpose of Philosophy to comprehend Reality. The scope of this task is of a magnitude commensurate with the whole of Being, for Philosophy cannot properly be confined to any one aspect of Totality without avoiding a part of its burden; of Philosophy alone it may truly be said that it is the study of the All.

Yet, while the philosophic enquiry is thus concerned with Totality, the means of expression which philosophy enjoins, namely that of rational explanation, narrows not the scope, but the method of philosophic work. Other interpretations, æsthetic or ethical, though doubtless in themselves a part of philosophic enquiry, cannot properly be employed by the metaphysician without doing violence to his art; for Philosophy, more particularly in its metaphysical aspect, is explanation, the greatest of all explanations, and the method enjoined by explanation is expression by word and reason alone. As was said by Plato in the *Republic*, "Reasoning is the organ of the philosopher."

The absence of the recognition of this fact at the outset may be fatal to philosophical enquiry; to the lack of this notion of fundamental Reason may be traced the absurdity to be met with in several philosophic works of the present century, which, in order to postulate the invalidity of the Reason, seek to give cogent rational arguments for doubting the basis on which they themselves rely.

Reason, which is thus the only medium permissible to the philosopher, is largely, if not wholly, dependent upon the use of words, and the study of the nature of words is thus the first problem which demands his attention. At the outset of every philosophic enquiry these questions call for answer and must be satisfied: What are words, and what are the limitations which their use involves?

This problem, which is fully discussed in Logic, is here only considered in so far as is necessary for our purpose. It is apparent that a word or a combination of words, whether conveyed by sight or sound, have only meaning in so far as they convey idea to the recipient; it is clear that no word, however vivid, produces in the consciousness of the receiver, who may of course himself be the author of the word, more than an auditory or visual sensation in the first place, and that an interval ensues in the consciousness between the reception of this sensation and the idea which springs from it. The period of this interval may vary according to the familiarity of the word and the predisposition of the hearer, but in every case the idea is secondary and consequent upon the sensation.

That words have an emotional as well as a

rational significance cannot be gainsaid. Such sounds and sights as are represented by the words "God," "Love," "England," "Self" produce emotional disturbances irrespective of their connotation, nor can it be said that any word is wholly free from this quality of euphonic disturbance of the emotion. Were this not so, oratory would be indistinguishable from dialectic, and the poetic faculty would be limited to logical utterance.

The realization that words have emotional properties which may and often do tend to produce perturbation of the understanding is essential to philosophic study.

The emotional qualities of words are twofold, æsthetic and ethical. The æsthetic qualities tend to produce in the recipient a feeling that both the word and the idea which it conveys, themselves distinguishable, are pleasurable or repugnant; the ethical qualities, the notion that the word, whether pleasurable or repugnant at first hearing, ought or ought not on moral grounds to be admitted into the understanding. In young children and in savages the æsthetic aspect of words is very clearly present. The child and the primitive man love to repeat pleasing words, especially those containing sharp distinctive consonants. In later and more educated life, it is the more sonorous and rotund language which makes the greater appeal, and in both cases the emotion and the idea conjured by the words are, from the first, with difficulty separable. Similarly, words of ethical import, such as "Sin," "Heroism," are given the freedom of the understanding largely according to their moral attribution; the word-idea as stimulus to action and the word as pure idea becoming closely connected by association.

What has been said of single words applies with even greater force to words in combination. This subject is more conveniently considered when the significance of words in combination is discussed; for the moment it is sufficient to note that all words, in combination or otherwise, have three distinct powers of psychical disturbance: rational, ethical, and æsthetic.

The emotional qualities of words do not inhere only in the crude unique sensation of sound caused directly in the sense by the sound of each word, but also in the more secondary emotions which in the process of apperception are consciously associated with the whole feeling of the auditor. Thus one of the first tasks of philosophy is, not to eradicate the emotional effect of words, for that is scarcely possible, but to evaluate and discount it, and thus to endeavour to mitigate its influence upon rational conclusion by a recognition of the force of its power of aberration upon the understanding.

THE NOUN:

Words have been classified by grammarians according to their function. Of the Noun as the name of a Thing it may be said that its utterance produces an idea which involves the notion of constant properties—the more general common nouns of properties shared by a class, the more particular proper nouns of a more specific peculiar collection of constant properties. Thus a particular man, John Jones, though he may possess properties which may be shared by mankind, in some particular must stand unique, if only because, if he did not, he would be indistinguishable and so unnameable apart from the rest of men. All

nouns particular are thus in some sense general, in some sense unique.

It was long a commonplace among psychologists that, in our sensational experience, no general classes of sense data corresponding to nouns general are to be found, though, as will be seen hereafter, this assertion has been very much overstated. But, whatever view may be taken of Sensation, it is evident that nouns presuppose sensations, which, if not in themselves defined, are at least logically definable, for the difference between one noun and another can only have rational significance if nouns refer to ideas which conjure constant properties whose limitations are defined by the use of the word employed. If John and Tom are identical, one noun and not two will properly describe them, and the difference between the words "John" and "Tom" in such a case would only be at most an emotional and not a rational one. Thus nouns, rationally used, presuppose discrete sense data, distinguishable from one another at least to the extent by which the ideas symbolized by their nouns are distinguishable.

In this respect also nouns general are not essentially different from nouns particular, for a class has only meaning in so far as it is different from some other class, so that each class, like each particular, is in itself in a sense unique. Each general noun presupposes a collection of individuals having at least one common property connoted in the general noun, and each individual assumes some degree of particularity in the sense datum.

If nouns general resemble nouns particular in being based upon uniques, it is also true that nouns particular are themselves in the widest sense general. The word "table" produces on

the hearer the notion of many objects having various qualities. It is hard, possessed of the general qualities of wooden substances; and the phrase "My study table," as a matter of sensation, has only rational meaning in so far as the auditor knows of tables generally. A particular word cannot, by itself, denote sufficient properties to explain or identify the idea in the consciousness. The word "John" denotes certain properties; the properties, though in their combination unique, assume each property in itself to be the property of a class, for if each quality also were unique, the word "John" could not be correlated with the rest of conscious experience, and so would be rationally meaningless.

Indeed, it is difficult to see how any property appertaining to a noun particular can be other than a member of a class. The examination of verbs will exemplify this further, but at present it is sufficient to say that of every noun particular attributes can be expressed, that "John is good or strong"; that the particular *a* is *b*, *c*, or *d*, the general. These general qualities are called adjectives, and into such adjectives, which are universals, every noun particular can be resolved. The uniqueness of the particular proper noun consists of the peculiar grouping of its general properties and not in its own independence, so, therefore, fully to know a noun particular it is necessary to be acquainted with all the classes of property attributed to it, and Knowledge of the general noun in this sense precedes Knowledge of the particular. The consideration of the universal abstract noun is postponed until the adjective, from which it is compounded, has been discussed.

THE VERB:

If the noun is a word involving an idea of sensational experience, possessed of specific qualities, it is the proper function of the Verb, on the other hand, to actualize the qualities of the noun by predicting properties to it in a specific case, which, though potentially conjured by the noun itself, are not, at any particular time, actually evoked by it.

Thus the verb is dependent upon the noun, and from this fact arises a limitation of the verb as an instrument of affirmation. If, for instance, a verb merely adds a quality to a noun which is an integral part of that noun, or if a verb deprives a noun of an essential quality on which it depends for its being, its effect may be perturbative emotionally, but it cannot perform a rational function; that is to say, it does not produce a new symbolic idea and is used only in a repetitive or absurd, and not in a constructive, sense. If, for example, a tripod is to be defined as a table with three legs, to say that a tripod is a legless table is absurd, to say that it is three-legged is repetitive. This is most apparent in those verbs which are copulative, that is, in those of incomplete predication. Such are the verbs in which the copula is found, as in the phrase "All men are strong." In such a sentence, it is predicated of all men that they are strong men, or, in other words, that strength is one of the adjectival qualities contained in the complex noun "man." If it be a matter of opinion whether the word "man" does or does not in its essence connote strength, such a statement may produce idea; on the other hand, in the phrase "All men are human," it is alleged of all men that they are human, and here the word

"human" denotes neither more nor less than manliness, and so the affirmation is unprovocative of new idea.

Whether a noun in fact does or does not evoke the same idea in different recipients thus becomes a matter of importance, for if the same word be differently interpreted, it is difficult to ascertain whether it is used in a repetitive or in a definitive sense. This capacity for misunderstanding is, however, limited to some extent if it be borne in mind that for a verb to be definitive it must at least connote something other than that which is generally assumed as the essence of the object noun which it predicates.

Although the foregoing illustration was derived from the case of a copulative verb, the same statement is true of verbs generally. Verbs used in a repetitive sense can readily be expressed in a copulative form. The phrase "Men talk" may mean neither more nor less than men are, or are capable of the quality of, talking, and in such a case, if it be assumed that talking is part of the essence of man, the statement is a repetitive one. For let us assume the definition of man to be "a talking animal," and the phrase "Man talks" immediately reveals its quality. What then is the difference between the copulative verb and others? It is this, that the copula immediately predicates of a noun a quality which the object affirms to have been an essence of the original noun. The phrase "Man is good" straightway affirms goodness as a quality essential to man, and the copulative phrase, whether purely repetitive or definitive, is in both instances analytic and reveals only that which was implicit *ab initio*; for a copula is always analytic; though if the conno-

tation of the noun which it predicates is universally understood in the same sense it may be repetitive, or, if destructive of the essence, it will be absurd. If, however, the particular connotation has not so been generally understood, it may be definitive for this reason, that outside the generally assumed essential attributes of the noun, a particular accidental attribute, not necessarily denoted, is by the definitive verb incorporated into the noun in the particular case.

But the active constructive verb, though, like the analytic, it predicates qualities of the noun, does so by a different method and performs a different function; for here there is, on the face of it, no suggestion that the quality predicated is more than potentially inherent in the original noun. The active verb assumes, indeed, that in no sense has the essence it predicates been more than inherent in the noun before it endows it with activity by describing an Event. Take, for example, the phrase "Wood burns." If the essence of the word "wood" connotes burning, the phrase means no more than wood is a thing capable of burning, a statement which is of necessity either true or false; but the sentence "The wood is burning" immediately involves an active temporal contingent notion of Event; namely, that a particular wood is in process of combustion, which is an assertion capable of contingent experimental verification. Or, again, "Jane loves the cat" involves the idea, not only that Jane is a cat-loving person, which is definitive, but also that, at a particular time, that is now or in the past, Jane so loved the cat, which is a synthetic active idea.

The test of the quality of a verb, therefore, is

whether it can be reduced to a copulative form without violence to its sense. If it can, it is definitive or repetitive, and its assertions are necessary. If it cannot, and requires Event for its expression, it is an active transitive verb, and its assertions are contingent.

THE ADVERB:

To estimate the Adverb we must revert to what was said when the verb was under consideration. It will be remembered that verbs were discovered to be repetitive, definitive, or active, the expression of the two former being the function of the analytic necessary verb, and the latter of the active contingent one. In the case of adverbs it is with the active verb that we are alone interested, since adverbs amplify the description of those temporal and spatial events with which the active verb is concerned.

Of adverbs it has been said that they answer the questions "How," "When," and "Where," and this assertion of the grammarians, if not exhaustive, is a convenient one for our purpose.

The question "How" raises straightway the problem of Manner, but manner involves Activity, for, unless there be some change, the manner of the process cannot be described. Now, Activity in its turn involves Change. If any sensation remain identical in every respect, it does not *become* anything; what it was, it is, so that, while it may be described by a definitive verb, no active verb or adverbial qualification in such a case can arise. Thus the adverb of manner involves the notion of change—used otherwise it is strictly adjectival and definitive, and merely amplifies the original connotation of the noun.

In discussing nouns, we had occasion to say that they present the idea of constant and peculiar properties to the class or the individual. Of the noun we may also say that its use involves a recognition of the absence of actual change in its essential properties, for whatever properties are essentially connoted by the noun; if those essential properties vary, the noun is no longer descriptive of the sensation. We may take the sentence "The prince was turned into a frog." If the noun "prince" connotes properties antithetical to those of frogs, it is obvious that the frog cannot still remain the prince, since, by being a frog, it acquires properties inconsistent with the essential requirements of princeliness.

Thus, while every active verb and adverb predicative of a noun must involve a change in the noun, such a change cannot be of such a kind as to destroy the essence of the noun in the process. If we say "The cat walks," a change takes place in the notion of the cat, which formerly may have been conceived as stationary, but there is nothing in the essence of the word "cat" which necessarily involves a stationary condition: its stationary quality is accidental. The qualities of a frog, on the other hand, differ from those of a prince in essence. There are therefore two types of active verb possible; the one involving the destruction of the noun predicated, which is only conceivable in the world of the miraculous, while the other, which is the only one possible in a causal world, though also involving change in the noun, can never exceed its possible essence.

Change, therefore, is either destructive of the original idea or augmentative; in the latter case the change may best be described as "causal,"

in the former as "miraculous." For example, the phrase "The prince became a frog" is miraculous, for the word "frog" is antithetical in essence to the word "prince." From the moment that the prince becomes frog he is no longer prince, and no longer can properly possess essential princely connotations; but in the phrase "The girl became a woman" we are in causation, and the becoming can continue without violence to the predicated noun. These considerations will help us considerably in discussing adverbs of manner. To the question "How" an answer may be given so long as the noun still remains causal, for the manner must be a manner of changing still potential in the original essence, but an answer to the "How" which is miraculous, in that it is destructive of the connotation, provides no rational explanation, since it cannot relate the original noun with the event predicated of it.

At the same time it is important to notice that the necessity for the causal in change, while applicable to the How of Event, has no place in the Why. As will be seen hereafter, Things have properties, which, in so far as they are nameable, are causal, but the Why of the actual existence of Things at all cannot be explained by causal method.

Having said this, we have still to investigate the meaning of Relation used in this connection, and to do so involves an examination of the "When" and the "Where," the other two modes of adverbial expression. We have seen that the rational use of the verb and adverb involves causal Change, and this notion of change brings with it the great problem of Time and Space.

Though it is not proposed at this stage to

deliver a judgment on this matter, any further than is necessary for the immediate object of discussing words, this much may be said, that the allegation that nouns have properties immediately involves notions both of Time and of Space, for the assertion that a Thing has a property is in effect a statement that it will, under conditions which have not yet arisen, in time satisfy in space the requirements we expect of it.

The universal " Horse " connotes adjectival properties of solidity, shape, colour, and other qualities involved in the essential notion of that animal. Of no horse can it be said that all its qualities are immediately present to the sensation, and the noun " Horse," and, indeed, every noun, is therefore primarily a hypothesis which asserts that it will sensationally satisfy assumed conditions if contingently tested. The particular horse, recognized under the general class, is similarly contingent at the outset. This reference to the sensational proof of nouns thus involves the notion of Causation, that is, the assumption that sensations occur in sequence, for the proof of the conception " horse " by observation of sensational consequences must follow after the original sensation, however short may be the interval between the sensation and the proving.

Such a proof, when it occurs, must have reference to certain other related sensational variations: the live horse will eat, a wooden one will not, and so the notion of environment in the presence or absence of equine attributes requires temporal and spatial relation as a means of the proof of the noun-theory originally advanced. To put it negatively, when there is no possibility of proof in Time and Space, there can be no causal relation

and no expectation of sensation would consequently be verifiable, and, therefore, the erection of universals would be impossible, since each particular noun cannot have all the sensational possibilities of a universal without one being exactly similar to another and so unidentifiable. But since in one particular alone all the sensational possibilities necessary to place it in the class are not possible, and since Space is necessary wherein to verify the classification and Time to test it, without Time and Space there would be no generalization possible. It follows that, as we have shown when discussing nouns, in the absence of causal generalization particular nouns would be meaningless, and we should be back once more in crude sensation and reasoning would be impossible.

For these reasons, Time and Space are essential to contingent thought. The adverbs of " When " and " Where " are thus integral mental parts of change; they identify and relate variation in property, and so make possible the verification of the noun.

THE ADJECTIVE:

We may obtain a closer insight into the nature of noun and verb by a consideration of the Adjective. The parts of speech, we now see, are, primarily, devices for the description of Event, and they differ fundamentally according to whether they describe the probability of such Event or its actual occurrence.

The noun we have found to be a potential symbol of Event, for it describes what Things will do under assumed circumstances. The verb is kinetic; it symbolizes the Thing, in Event, actually performing its alleged possible function,

while the adverb asserts the manner of that performance; we have yet to consider the case of the Adjective.

The adjective, like the noun, is potential. We may assume a noun to have many potential qualities, *a*, *b*, *c*, and *d*. These are its essence, and if the Thing were to lose one of these, the noun by which it had been described would cease to be appropriate. Now each of these properties *a*, *b*, *c*, and *d*, the complex of which constitutes the particular noun, may itself be grouped with other nouns in different combination.

Let us assume *a* to indicate the property "mortal," that is, the essence *a* asserts that, in the Event, in Time, the possessor will die.

A is an essence to be found in all men, in which *b*, for example, may be another quality, such as "rational," but *a* is also to be found in combination with *f* in animals, *f* symbolizing the instinctive. Thus a particular essence of a complex, the *a*, may be isolated from the complex and considered by itself; like the complex, it is potential and not kinetic, and such a potential property, divorced from its complex, is known to the grammarians as an adjective. Adjectives may be essential or accidental to a noun. In the example above given, the adjectival noun "mortality" is of the essence of the complex, and, while every noun may be resolved into its adjectival qualities, the employment of the adjective to qualify the noun, when it is already contained in the essence of the noun, would be repetitive, just as its denial would be absurd. The more fruitful use of the adjective is to be seen in the addition of an accidental property to the noun, as in the phrase "This English man," "This *k* (*a*, *b*,

c, d)." The adjectival accident has only this limitation, that it cannot be used to contradict the essence of the noun which it qualifies.

The use of the adjective, like that of the adverb, necessarily involves Causation, for, if the same qualities grouped in the same complex did not always produce the same results under the same conditions, those qualities could not be isolated from their complex, nor could assertions be made of their potentiality. Unless the adjective "Heavy" produces like or comparable results, whether attached to the complex "man," "elephant," or "stone," the word "heavy" would be meaningless and would fail to symbolize Event. The notion of potential quality depends upon uniformity of performance in Event. Thus, strictly speaking, the adjective is more basic than the noun, in that it asserts a potential unique quality, whereas the noun, however individual it be, symbolizes some complex. Nevertheless, since in the development of understanding the complex Thing is named before it is analysed into its component essential properties, it is convenient to give priority to the Noun.

THE ADJECTIVAL NOUN:

Finally, the adjectival properties common to several noun complexes may themselves be created into a noun of the kind known as adjectival. If the adjective is the particular unit from which the complex noun is compounded, the universal adjectival noun is based upon a synthesis of the common qualities of nouns themselves.

The adjectival noun is remote from Event; it is the symbolization of a single quality extracted

from several noun complexes; the question of essence or accident does not enter into its consideration, since it is its own quality and nothing more.

PRONOUNS AND PARTICLES:

The consideration of Pronouns and Particles need not long detain us. Both are essentially "grammatical" in character; they are employed exclusively as convenient artifices for avoiding prolixity, but, beyond that, contain little which is not implicit in the use of verb or noun.

In many languages, indeed, their use is dispensed with altogether, not only formally, by means of appropriate flexional changes of the noun or verb, but actually, by the direct use of more prolix methods of expression.

Pronouns and particles are merely convenient forms of summarizing narrative.

Thus conjunctively to say that tables *and* chairs are hard is merely a convenient method of expressing the statement "Tables are hard, chairs are hard." The preposition "of" is a mere summary of the phrase "appertaining to," and so forth.

Pronouns are, perhaps, even more obviously merely abbreviative in function, and need no illustration.

The Interjection is interesting in that it represents the rational faculty at its minimum and the emotional perturbation at its highest. Even the interjection, however, is not wholly free from rational significance.

The phrase "Oh John!" according to the tone and manner of its utterance and context, may

mean " I am surprised (pleasantly or unpleasantly) at you, John," or mere emotional surprise.

The Interjection as part of speech is distinguishable from the Exclamation as mere reflexive sound, or even as animals cry, by this element of connotation.

CONCLUSION:

A brief survey of the various instruments of language sufficient for our purpose has now been undertaken, and therefrom several valuable conclusions have been arrived at.

In the first place we have seen how words are a means whereby idea can be conveyed from one consciousness to another, and that such words, in differing, depend upon differences in the Event of the sense data to which they ultimately refer. We have seen how the Noun, whether general or particular, becomes in the last resort a theory of sensation, and how its use is tantamount to an affirmation of properties in that which it symbolizes, and how the Verb, in so far as it is synthetic, denotes the predicated properties of the Noun in process of fulfilment. Thus considered, the Noun becomes static and theoretical, the Verb dynamic and actual, or, in other words, the Verb expresses the idea of the Noun performing its alleged sensational potentialities—potentialities which the Adjective symbolizes, a process in which the essence of the Noun can only be destroyed in the world of the miraculous; while the Adverb explains the relational manner of the fulfilment.

Nouns and Adjectives thus convey the idea of potential, and Verbs and Adverbs of kinetic sensational disturbance. From these conclusions it appears that Philosophy, being limited to the

use of words and explanations, must assume at the outset Sensation and Event, if only to give meaning to the words which it employs. The importance of the initial recognition of this fact will become increasingly apparent hereafter.

CHAPTER II

ON SENSUAL STATEMENT

INTRODUCTORY:

If philosophy be defined as the appropriate "naming" of reality, words, which are the raw material of nomenclature, become of cardinal importance. So far, however, our attention has been confined, for the most part, to the more elemental parts of speech; we must now proceed to consider the import of language, of words in combination. Our primary purpose in combining words is to make Judgments in statement. Like single words, such statements may conveniently be divided into classes according to their function, but there are certain properties common to all statements which call for preliminary examination.

First, every such statement is in essence affirmative, for though the affirmation may take many forms—may be conditional, even negative in intention—on analysis every statement resolves itself into an assertion. Now, assertion postulates at least two characters, a something or "that" assumed and a character or "what" predicated of it. All judgment in statement is reducible to the assertion "A is B," though, according to the nature and manner of the statement, the worth of such an assertion may vary considerably.

Secondly, of every statement the question is evoked, "Is it true or false?" The truth arising from the statement may range from necessary platitude to discovery, the falsehood from absurdity to deceit, but in every case, of the statement "A is B" the question will arise, "Is it"? Thus for every statement arises the problem of validity, and this in its turn involves judgment.

Thirdly, the application of judgment in statement necessitates a mind capable of making decision. This mind may belong to the person who makes the statement, and, indeed, the statement may never exist outside his own mind and may not be uttered at all; but the assertion that judgment in statement demands a judge is not disturbed by this apparent qualification. Of all statement, it may therefore be said that it involves assertion, judgment of the validity of the predication, and a judge.

Statements may be grouped into classes according to the nature of the judgment they evoke.

They are:—

(1) Sensual,
(2) Formal,
(3) Metaphysical,

and raise questions of contingent, necessary, and philosophic truth respectively.

EMPIRICAL STATEMENT:

Sensual statements may be empirical or theoretical: they are alike concerned with the events of sense, and consist of three parts: a condition assumed in the subject noun, a condition of change involved in the verb, and the condition of the

changed; the final result of the Event upon the predicated object.

In every statement of Event the subject noun must be assumed to possess, potentially, the power of affecting the object, and the change must be capable of penetrating both termini of the statement. Thus, in the statement "Mr. Gladstone felled a tree," Mr. Gladstone is assumed to be a man capable of felling trees; the accidental quality of Tree Felling must not offend the essence of the noun, and the tree must signify something capable of being felled.

Now a noun, as we have seen, symbolizes a bundle of potential properties, and only as a name for such a bundle does it possess rational significance. So that, in every sensual statement, the noun changing (the subject) and the noun changed (the predicated object) must have some property in common whereby the one can affect the other. Moreover, the manner of the affecting must be determined by the capacity of the instigating subject and the capacity of the receiving object. Of all such statements it may be said that the subject, verb, and object must be interpenetrable.

For, consider the subject noun: it has meaning in so far as it denotes properties, and the properties are the symbol of its power of sensational disturbance. These disturbances are the changes above described, and are only known sensationally by an observation of that which they disturb. Now, the capacity to be disturbed is also a property, and, as the disturber has only certain defined properties of disturbance, and the disturbed certain defined capacity to be disturbed, it is clear that the disturber can only affect the disturbed through

its limited activity operating upon the limited passivity of the object.

In so far as a disturbance passes from disturber to disturbed, the process may be merely empirically described in sensual statement. No theories need arise at this stage; the sole question of validity in such a statement is whether it does or does not give to the recipient a correct notion of the described events.

Such an empirical sensual statement to be true requires that the subject noun—that which is changed—be correctly described; error may here creep in, first, either in the author having a false impression of what the subject matter was; secondly, the author may fail sufficiently to define the subject noun to the recipient; thirdly, he may misconceive the object; fourthly, he may incorrectly define the object to the recipient; or, lastly, may misunderstand or fail correctly to define the change.

In the simplest empirical sensual statements it is scarcely necessary that any purely conceptual notions should arise. A small child will be aware before he will describe, and in such statement all action is in the present or is timeless, as "Daddy walk," "Train go puff-puff." Grammatically this empirical statement can be reduced, on analysis, to noun and verb alone. Such an empirical statement may be predictive or merely narrative. When, for instance, it is asserted that, in the event, certain defined results will occur, the assertion may be predictive, and something more than a merely narrative one that the noun discharges its potential properties, as is the phrase "Train go puff-puff," and on the face of it an element of theory would seem to arise in the assertion.

The more theoretical sensual statement, however, involves relation. Nevertheless a statement apparently theoretical may in fact be only empirical and descriptive of a prior intuitive correlation, such as may well be subconsciously combined out of perceptual elements by a child or uneducated man. Such an empirical statement will not depend on any knowledge of general classes, but only on a subconscious correlation of perceptions which are subsequently conceptualized and so presented to the recipient in the form of a narrated predictive statement. Thus, in the phrase "The wood will burn," the statement may be made on one of three grounds :—

First, of formal necessity, in that, being wood, burning is denoted, of which hereafter.

Secondly, in the theoretical descriptive sense that wood, being of the class of chemical compound containing carbon, will readily combine with oxygen and so produce the phenomenon of combustion ; and

Thirdly, the speaker, having by practical subconscious experience correlated wood with burning, will thereafter merely empirically describe his belief.

It is in the third of these senses that the empirical statement is used, for the second involves consideration of general classes in their attributes and relations, and therefore falls within the class of theoretical statement.

Empirical statement is here only used as a description of a prior intuitive judgment which has not been co-ordinated conceptually in the mind, but only co-related by unintellectualized experience ; it may be said to resemble mere elementary narrative in requiring the use of two

parts of speech only, the noun and verb, for its expression. The observations of psychologists, such as Preyer, as to infants, go to show how, in that early stage, the thing and its activity are alone described: "Daddy walk" is such a descriptive empirical statement; at an even earlier date both noun and verb become indistinguishable in speech, the word "puff-puff" denoting both the presence of a locomotive and the engine in motion.

Could an animal speak, its "thoughts" would probably be of just such an empirical descriptive or narrative nature as the young child's, for it is doubtful whether such a child does more in the matter of holding a conscious general idea of things and their relations than the animal does. The fact that his practical judgments find subsequent description in speech gives to them an appearance of conceptuality which in all probability they do not possess. Many statements of human adults, who are more or less capable of conceptualization, may similarly fail to reach above the stage of acquaintance, and in such a case the spoken word, being merely a repetition of the already prejudged co-relation, may well mislead the recipient into the idea that the speaker is expressing thought, when, in the most literal sense, he is really only voicing prejudice.

To distinguish empirical from expressed thought in theoretical statement, one test will be whether the statement is resolvable into noun and verb alone; the presence of other necessary parts of speech, such as adverbs and adjectives, will raise a presumption that the author is giving utterance to some conceptual thought by involving some degree of description by attribute, classification,

and relation, however crude may be the theoretic notion so expressed.

THEORETICAL STATEMENT:

If it is convenient to separate the consideration of empirical statement from that which is more theoretical, it must be realized that the distinction is only one of degree. In both cases, the truth predicated is contingent upon a correct explanation of event, and into both empirical and theoretical elements alike enter in greater or less measure. The speechless animal is capable of empirical judgment; for, without definite concept or knowledge of Truths, he can intuitively correlate new circumstances with the core of his past experience, so as to produce appropriate result; and, in casting about for an example of purely empirical statement, perhaps no better definition can be given than that such a statement is of the kind which would be made by a dog or monkey if he could speak.

In every articulate statement, however, even if it be but a statement of previous intuitive correlation, some element of theory, of conception, must enter. Such a statement may be still essentially empirical, but it has such amount of conceptualization in it as is involved in the choice of appropriate truthful language in which to describe the intuitive correlation.

From the psychological standpoint, the most salient difference between empirical and theoretic statement is that in the former the conscious employment of Memory is lacking which is present in the latter. The funded experience from which the animal derives his appropriate correlation has been already touched upon, and this experience,

which is formed by habit, acting within the capacity of the animal, has developed gradually from the unicellular organism. In so far as man employs only this experience and describes nothing but it, the description in word-form is still essentially empirical, but directly reflection occurs and memory is involved, a greater degree of the theoretic element enters in.

To understand the functions of Memory we must conceive the consciousness, not in those rigid classes into which some psychologists divide it, but as a continual varying flow, in which the combination of psychic elements present at any particular time is always unique and never precisely repeated; in other words, we must regard the ingredients of consciousness to be, in the first place, only one degree less unique and fluctuating than the presentation of external sensation.

We say one degree less, because the presence of consciousness at all involves some amount of correlation of sensation and unifying personality, however small. Even in the amœboid we find a contraction and non-causal pause between the stimulus and reaction which is involved in the amœboid's personality. This pause varies in content according to the violence of the stimulus, but the quality of the pause becomes fixed, so that the internal psychic life of the amœboid is always one degree less various than the external sensation, in that the original mechanical possibility of stimulus is restricted in the personality of the amœboid to certain non-causally limited possibilities of reaction.

The growth of the prime psychic pause and non-causal personality in reflex and habit has been traced by psychologists, and, in empirical statement,

it may be assumed that alogical correlation has attained its fullest capacity. The presence of Memory, however, does not destroy the earlier alogical experience, which remains as the core around which the memory will cling, and this fact produces consequences that may be enabling or disturbing to the free play of the intellect.

Experience involves three elements: Sensation, that is, immediate acquaintance with the objects of experience; a volitional Self capable of experiencing sensation; and, lastly, a capacity in that Self of Memory for the retention of the sensation or a part of it. The first of these, the Sensational, is the subject-matter of sensual statement; the second may be subdivided into personality derived from heredity and personality arising in the organism itself; while out of the third comes memory, and hence the power of conceptualization.

There are certain qualities of the consciousness which evolve the power of retention of experience which are themselves anterior to experience, and which therefore belong to the second class. In the final analysis these would seem to reduce themselves to two, pleasure and pain, or perhaps in the last resort to one, namely the inherent Will of the organism to avoid disintegration. On this head two important observations must be made, which will receive fuller treatment later. First, that this dislike to disintegration appears to begin at a stage far lower than the cellular organic, and, secondly, that circumstances may and do arise, as in reproduction by fission, when the resistance to disintegration appears temporarily to be discarded. The capacity to experience sensation would thus appear at a very early stage to

be accompanied by a spontaneous non-causal Will in the organism to cherish its capacity so as to acquire experience by continuity of existence.

This Will manifests itself at the cellular stage in a spontaneous variation in reaction to those sensations which are or are not prejudicial to existence, and this acquired experience, acting on any particular new sensation, will tend to befriend the organism by modifying its reaction to stimuli in such a manner that the reaction may subserve and not imperil the cell. The growth of experience may be traced in an increase in the capacity to weather novel and dangerous sensations. The elimination of those incompetent to cope with new sensations will tend to perfect the survivors, who will endow their offspring with an experience increasingly suitable to their needs, and, were it not that environmental problems, and consequently the needs themselves, were continually changing, a state approaching equilibrium might very soon be reached.

But in the lives of most individuals and species the environment is not so sympathetic. The deep-sea organisms may live and persist in surroundings not unlike those in which their very early ancestors had their being, but, with terrestrial life, the struggle becomes more complex, and the necessity for instinctive or intellectual agility is accentuated. Moreover, with the increasing specialization involved in a more exacting environment, needs other than those of immediate survival arise in many ways, through cleavage of interest in the individual and his offspring, in reproduction, and between himself and the Society in which he has his being; but the statement that the desire to avoid disintegration is the core around which

experience clusters remains unaffected by these secondary considerations.

It is scarcely necessary for our purpose, at this stage, to consider the gradual growth of intuitive experience; it is sufficient to note the absence of conscious memory in the process. The experience to be used in adaptation of the animal to its novel surroundings is not thought out, for the animal, though possessed of empirical memory, is not himself intellectually conscious of the fact. The development of conceptual memory from empirical experience can be studied in the mental growth of children. Certain qualities, such as Fear, Affection, and Curiosity, are shared by the child with the higher animals. These three are properties which have developed out of the original desire to resist disintegration, the third being the most remote from the basic emotion of preservation.

The faculty of Curiosity is a fortification against new and unknown environment by anticipation of its effects before they actually need to be met, and in this way not only that which is inimical, but that which may become so, is brought into the experience. In Curiosity, the animal, in a measure, anticipates the future, and so becomes less liable to external environment in that he now not only modifies his reaction to immediate hostile condition, but, by anticipation, may actually avoid it altogether. Curiosity in animals thus produces in them an empirical notion of Duration.

The idea of struggle against environment as the principal stimulus to mentality must not, however, be over-emphasized. Nothing is more obvious in psychology than the fact that actions, originally developed for particular limited pur-

poses of preservation, become, in the process, habits, and so themselves form a base for new psychic developments which are only very remotely connected with the original purpose, and, indeed, in many cases, may even be antagonistic to it.

Thus Curiosity, originally a protective faculty, continues to develop for its own sake and rapidly acquires a dominance quite unconnected with any immediate purpose of survival. On a physical analogy, it may be said that the stream of consciousness in passing down a particular channel often overflows its bank, and that this outpouring of itself gives rise to lakelets, which in their turn are sources of new streams flowing in directions quite other than the original channel.

As regards Society, the relation of parent and child results, at any rate in the early stages, in all infantile curiosity as to sensation being answered sensationally in a somewhat similar manner, and so it is that the empirical knowledge of all children is more or less in agreement at the outset.

But such knowledge as is derived from the sensational results of curiosity would not reach beyond an acquaintance with particular sense data, were it not for the social conditions in which children grow up. This social nexus has its basis principally in Imitation, for into the child's experience comes not only the experience of his own investigations, but the sight of similar actions reacting upon other people.

The distinction between the living and the not living is recognized at a stage phylogenetically almost as early as the beginning of life itself; certainly at the sexual stage of development the father and mother become mutually acquainted

psychically, and the avoidance by animals of beasts of their own sex of another species, together with the later relation between parent and child, all tend to strengthen this quality. Given this recognition of the existence of other live beings, the child soon begins to imitate their actions, which he perceives to lead to certain desired results. The monkey, man's nearest relative among the animals, appears to have this faculty of imitation considerably developed, and it is clear that, without it, intellection would not be possible, for from imitation comes language, and without language, or some other concerted symbolism, thought is scarcely possible.

We have seen how, grammatically, the noun, the name of a thing, is a hypothesis at the outset, and to the young child, naming is in dire earnest a theory hard come by and of great import. It is not astonishing, therefore, that the child and primitive man should confuse successful naming with the thing named, and believe nomenclature to be actuality. The imitative faculty is strengthened by the observation of similarity in those persons who are sufficiently in sympathy to compel emulation, and, finally, Society itself, in school and community, by insisting upon discipline and regulation, tends to augment the initial imitative tendency to an immense, perhaps to a deplorable, degree.

Language, commencing thus in mimicry, curiosity, and emulation, rapidly reaches the stage where a recognition of the similarity of certain familiar reactions comes to be symbolized by sounds and writings, and it is at this stage that the conceptual memory begins. At this period things are principally known by what can be done

with them; "fruit" is something which can be eaten, "the cat" is something which can be stroked, etc., and the memory is confined to knowledge of this order. In other words, a stage of memory is reached when the Noun is the sole part of speech to be employed.

While it is difficult definitely to fix the order of intellectual development, at a later stage it becomes clear that soon more than one quality is evoked in memory by the noun, so that the cat may both purr *and* scratch, and so forth. This is the period of early association, in which common properties of various things come to be recognized. Thus, gradually, the memory becomes enriched with universals, so that the employment of the universal "cat" conjures up its particular attributes of purring and scratching and capacity to be stroked. In this manner, gradually, the attributes become capable of detachment from the things to which they originally adhered, and at last themselves become the subjects of memory and explanation.

With the coming of the detached attribute and the adjectival noun, conceptual statement becomes possible; for, by making use of the concept, we are able to correlate the ideas of things and their attributes in such a way that the concept can be employed, apart from its perceptual base, so as to bring into the mind a common property in different sensations which can serve as a means of comparison. The notion of Self, which will be discussed hereafter, also arises with the conceptualizing power. From the grammatical standpoint, the adverb is seen to come into use.

A wealth of ideas is thus presented to us whereby sense data can be understood in terms

of one another and their potentiality of action in the future, together with their history in the past, can be derivatively predicted through a conceptual analysis of their possibilities.

Finally, in Science, the whole data of experience are thus co-ordinated and systematized, and so, in showing the dependence of one fact upon another, cosmic explanation becomes possible.

It is at this stage that words, as instruments of reason, assume their full significance and serve to symbolize correlation between the various elements of consciousness.

INTELLECTION:

Since theoretic statement is the concomitant of reason, it cannot be understood in its full purport without some preliminary study of the elements involved in contingent intellection.

Confining our remarks to theoretic statement, we will assume a sensation, or series of sensations ; assume further some novelty or other incapacity to prevent a complete subconscious correlation as to their import, so that thought is necessary in order to discover what the sensations are. What happens ? An assumption is made that the sensations agree with the nearest universal already known, and we say "That is a horse," or perhaps, in more qualified terms, "I think that is a horse."

Now this denomination "horse" is strictly a volitional personal guess, for it is scarcely possible that all the properties of a horse can be realized on the instant in the perception of a sensation.

What is said is this :—

"The perception has the properties *a*, *b*

and *c*, and because a horse has the properties *a*, *b*, *c*, and *d*, I think the perception is a horse."

Next, to test the matter, assuming the perception to be a horse, we should look for the property *d* in it. If we found it, we could say that our description was contingently true.

It will be noticed that the universal "horse" connotes properties which are themselves experienceable as sensation, but it is obvious that in many of the more theoretical concepts, such as the case of an atom or molecule, the assumption and prediction cannot be based on any directly perceivable sensation. The reasoning, therefore, which identifies a molecule as idea must necessarily be more subtle than that which is immediately based upon a particular percept, but, as we shall see, it is not essentially different in kind, and its validity is, in the fullest sense, contingent.

It has been suggested by certain philosophers, who advocate an extreme nominalism, that, in any event, the universal does not represent any specific sensation at all; that the word "chair," for example, does not correspond to any specific piece of furniture perceived as sense datum, and so, as every chair varies, and as an infinitely various number of chairs can still be created, it is said that the word "chair" has, strictly, no validity. The discovery is not a very great one, and the fact that during the argument it is necessary to employ many general words in order to destroy the significance of the general idea produces a considerable difficulty.

In truth, no competent philosopher ever has suggested that the universal chair was exactly

representative of a particular sense datum; the problem rather is that thought cannot proceed without the use of concepts, and that, without thought, just as a chair cannot be described or recognized as a universal, so neither can it be described or recognized intellectually as a particular chair. Both particular and general, as we saw in the first chapter, are equally logical and removed from sensation. Indeed, it is clear that the names of particulars, like those of generals, have only rational meaning in so far as they are taken up into knowledge and so generalized. "My chair" is a mere sound unless I know what "a chair" is. The universal is not a mere group of particulars, but performs its function in connoting those properties which a number of particulars have in common. Whenever, therefore, a universal is employed, those properties, with all their potency, are at least involved. Thus general terms, however simple, involve plurality; for to distinguish the particular from the general, at least two of the particulars must be involved, if only that they may share some general property in common.

This assumption of plurality involves Relation. Thus the two sense data may appear identical, but exist at different times; or the two sense data may exist at the same time and be generally similar, but have certain additional individual properties, other than those connoted in the universal, which distinguish them from the basic particulars of which the universal is compounded. In some aspect or other they must be different, and on their similarity in difference the universal is founded. It is this difference of property in the particular which the adjective denotes. In

conception, therefore, every particular noun must have an adjective to denote it, unless it be a mere "Proper" name—"*My* horse," "*Your* horse," "The *brown* horse," etc.

The universal is thus not a mere collection of particulars, but an assertion of their common properties. Passing to these common properties, we have learned how these find expression in a verb which justified in the event their assumption in the subject noun, and for this reason we may say, of universals, that they and their particulars involve at least one appropriate verb in common.

The syllogism asserts in the major, of a universal class, A, that it has a property *b* ("A is B"); it then passes in the minor premiss to assert that the particular C possesses the property of the class A ("C is A"), and in conclusion, asserts that the particular has the property of the general therefore ("C is B"). The fallacy of the converse assertion, that because the particular has a property therefore the general will have it, becomes apparent when it is realized that the general has only some and not all of the properties of the constituent particulars; by a general noun, therefore, we denote no more than properties common to several particulars.

Nevertheless, though this assertion presupposes a necessary logical system, any actual contingent prediction must mediately rest upon observation; we notice a number of particular animals and see them eat hay, kick, carry loads, etc., and as a consequence the use of the universal "horse" arises, which, if sufficiently defined, will arouse in the recipient an assumption of its properties.

There appear, therefore, two basic requirements

in intellection: the volitional apperception, which places the sense datum within the general class, and the volitional conceptual deduction, which descends from the universal to the particular. Thus, the sense data of a horse acting on the memory or experience produce the hazard that the animal seen is equine, but, in order to classify it as a horse, the universal "horse" must already pre-exist in the mind, and is indeed itself the verbal symbol of a memory of horses.

This memory has itself a life, and is subject to decay under the influence of forgetfulness and contiguity. Contiguous ideas cling by association to the original memory promoted by the word "horse," contiguities which vary with the personality of every individual; and these may tend to cause obstruction in the intellection going forward, by arousing in the memory, and consequently in the whole mind, ideas irrelevant to the matter under discussion.

Thus the consideration of a particular problem of sense data, as to whether an animal is a horse, may be distracted by the word "horse" contiguously setting up in the memory an idea of a circus, which in its turn may remind the would-be reasoner of some infantile episode, how once he paid 6d. to enter a circus; the 6d. may then lead to a consideration of money, from which an idea of the money market may arise, if he be a financier; meanwhile the sense data await solution.

The correction of such aberration, from which no thinker is entirely free, is known as concentration, and consists in a volitional limitation of the contiguity of the attributes of idea to those relevant to the matter under consideration, and this concentration, no less than the original

inductive hazard, involves the question of Will, which will be discussed hereafter.

It has now been made evident that the universal describes various common properties in particulars, and that, without such properties, it is difficult to give a rational meaning to a particular.

Next it must be observed that, as the universal is extended in wider and wider classes, the properties denoted by it decrease in number. Thus from the chairs *a*, *b*, and *c* we get the universal " a chair," but the species " chair " and " table, " though they possess different properties, yet have sufficient common characteristics to be included in the genus " furniture." Of far more sense data can it be predicted that they are furniture than that they are chairs, for the tabular properties which would defeat the species chair satisfy the genus furniture. With this increase of scope, however, there is a decline in particularity, for, as the prediction is widened to cover more singulars, its requirements diminish proportionately. This is what is meant by saying that with wider classification the denotation decreases.

To understand the nature of species and genus we must pursue our investigation to its utmost limits. Invoking for the purpose the aid of science, we are able to reduce all the " Things " of sense to the classes Molecules, Atoms, Sub-atoms, and Ether. With molecules the possibility of connotation, that is, the variety of possible properties, is still considerable, but, with the coming of that yet wider genus the atom, we find that a very limited number of elements, of different property, are recognizable; while in the case of the sub-atom the elements are reduced to three or four manifestations, until, in Ether, the only

differentia are those distinguishable in the presence or absence of vibration. Ether thus appears, at the cost of covering all space, to be reduced to one property, that of stress, and from this stressed ether all matter is said to arise. Let us now deprive our ether of this single property. What is left? The difference between stressed and unstressed Ether has disappeared, and, if we follow our assumption, we are left with a completely homogeneous or pure Substance, which includes all phenomena and yet, or perhaps therefore, is either propertyless or possessed of all properties.

To take the converse case, a descent must be made from the general to the particular, until the final unique thing is stripped of all its relations. On the score that a particular chair is not sufficiently like another to permit the use of any word in common, we will hold each sense datum to be so unique in essential property, so limited in application, that it cannot be expressed in terms of its fellows, so that, at the last, we find our unique chair to elude us, since it is, by reason of its uniqueness, incapable of attribution.

From these examples we see that theoretic statement is only possible where correlation of attributes can be effected, and this again cannot be achieved unless the species to be correlated are united in possessing at least one common attribute in a common genus.

We must next seek to discover what are the limits of common attribution. In the first and most simple case the various species may be correlated and distinguished in the genus by the presence of some common element which is the essence of the being of both. In boys and men

the essence of male humanity in the two nouns makes the relation a simple one, and the differentium of age is easily distinguished.

But we may well assume cases where the essences of the two comparables are but remotely identical, while the accidental similarities increase. Thus, in the case of a motor-car and a bullet, both have a community in speed, but they differ in essence in innumerable ways. Finally, we may have the common attribute restricted to a pure quality, such as size, number, etc. Two pigs and two sonatas have only the quality "two" in common, and can scarcely be correlated, save mathematically. In this manner we are finally driven to ask what are the essential qualities which cannot be correlated in theoretic statement in a common genus, and, on examination, we discover these unique categories to be :—

> Simultaneity, in Space;
> Succession, in Time; which, compounded, become Cause, in Relation.

Thus, two otherwise disconnected things may be related in space only. "They say the lion and the lizard keep the court *where* Jamshyd gloried and drank deep"; so of time, "And as the cock crew, those who stood before the tavern shouted, 'Open *now* the door!'"

It is the limitation of theoretic statement and explanation that, on account of its contingency, it cannot enquire into the nature of the categories themselves; this problem is left over for metaphysical statement. In sensual statement, Time, Space, and Causation are assumed, and on them

all contingent explanation of sensuous phenomena is based.

PERSONALITY:

We have yet to consider the later processes of intellection within the time and space process, and, at the outset, it has appeared that the first element in all such intellectual co-ordination of pluralities is a volitional guess. The mental process which produces this initial hazard is of cardinal importance to our examination, for here it is that a leap is made from several unique particulars to one general idea; a leap apparently self-conditioned and non-causal, dependent only on the will and mental faculty of the thinker.

On this head we must recall a fact which has already been stated and will be amplified later, that is, that co-ordination of sense data can and does occur below the level of conceptual correlation. We have seen, moreover, how such intuitive co-ordination, *after* it has taken place, may be described in words, and how the idea which such words present may be subsequent to the intuitive co-ordination.

The important question immediately arises whether this process, primarily alogical, does not occur in conceptual hypothesis also; in other words, do we not first "feel" certain sense data to be a horse, and *afterwards*, through an act more or less volitional, describe this feeling in a hypothesis?

An examination of human psychology, strengthened by enquiry into one's own mental processes, will lead to an affirmative answer. Indeed, it is difficult to see how a general can arise in the first place from particulars save through an alogical

"guess," since *ex hypothesi* at the outset there are no ideas but only experience to support it, and, as we have learned, *conceptually* the general must precede the particular name.

Now, this capacity to co-ordinate alogically is a power of Will inherent in an organism; it is the genius of the person or animal concerned, a Will acting upon a hereditary endowment modified by environment or experience, which, in its turn, is only potent in so far as it has become intuitive memory.

People, it is said, are taught to think; to stimulate this innate guessing power is the principal function of education. But before even this intuitive co-ordination can take place there must be some "doubt," some hiatus, between the sense stimulus and the reaction. In the amœboid a volitional, non-causal pause intervenes, during which the stimulus is absorbed into the organism, before the reaction takes place. The growth and quality of this pause increase with the degree of intellection practised by the animal.

The instinct differs from the reflex by reason of the choice of action depending not on one rigid circumstance, but on the whole purpose of the animal at the time; thus the instinct is aroused in mating, in hunting, etc., while the reflex is more mechanical.

Now this choice involves some attentive hesitation, however brief, which thus precedes the co-ordination. But, given such pause and such co-ordination, before conception takes place a second concentration of mind must occur, for, if no doubt arise as to the validity of the co-ordination, no desire for testing its truth can exist, and therefore no demand for conceptual consideration.

Thus, if we assume a perceptual co-ordination of a bull to have been achieved, which, acting intuitively on the experience, inspires a desire for flight, unless there be doubt as to whether the sense data are a bull or not, the flight will immediately take place, and the mental examination of the animal will be postponed for ever or to a more suitable occasion. This doubt operates by inhibiting the second limb of the co-ordination, the reaction to stimulus, and introduces an intermediate period, which, be it long or short, constitutes the period of intellection.

Thus, first we find one inhibition to the prime stimulus, next co-ordination, and finally, inhibition of the reaction to the co-ordination stimulus. This second inhibition involves self-consciousness, and is therefore a question rather of " character " than of " talent " in the possessor.

For the first time in intellectual development two emotions, the one positive and demanding fulfilment of the correlation, the other negative, calling for hesitation, fight for the allegiance of the Self, and in the consequent decision the possibility of the expression of the personal Will arises.

In the personality two hiatuses would thus appear to occur, the one precedent to perpetual correlation, the other precedent to conception, which intervene between the stimulus and the reaction. Each is in a sense volitional, purposive, and characteristic, but the latter far more so than the first.

We now assume the double spontaneous volitional hiatus; intuitive correlation in experience has taken place and the conscious question with regard to the perceived object " What is that ? " has arisen.

The object is perceived to have the properties

a, *b*, *c*, and *d*. These properties, we may assume, are known from experience to have likewise potentially the properties *f*, *g*, *h*, and *i*. That is to say, under given conditions, when *a*, *b*, *c*, and *d* exist, *f*, *g*, *h*, and *i* will be forthcoming. Here, then, arises the naming.

By the habit of memory the name "horse" is attached to a certain bundle of properties *a*, *b*, *c*, *d* simultaneously, which, under given conditions, will become *f*, *g*, *h*, *i*, and the thought arises "That is a horse." By the statement, therefore, "That is a horse," the idea is straightway conveyed to the recipient (1) that the properties *a*, *b*, *c*, and *d* are perceived by the author, and (2) the prediction that the properties *f*, *g*, *h*, and *i* will follow from it. In the intuitive stage the properties perceived might well produce the expectation of limited similar resultant properties by apperception, but the absence of the conceptual idea will preclude the observer from drawing any further conclusion from the properties or from conveying the notion of the properties to others, or from receiving from them any idea of the perceived object. Thus, without words or other conceptual symbols each person is confined to his own experience, and the memory on which he may draw in future contingencies is thereby impoverished.

It is scarcely necessary to pursue this illustration further. It is now clear that the first stage in reasoning is to give such a name to the perceived object as will contingently satisfy the attributes predicted.

To the assertion "That is a horse" another may reply, "No, it is not," and may himself hazard an affirmation that it is a cow. Or,

indeed, the perceiver himself may hesitate in his judgment and present to himself "on second thoughts" an alternative suggestion. The word "cow" immediately asserts another bundle of properties, *d*, *k*, *l*, *m*, in place of the attributes *a*, *b*, *c*, and *d* attributed to the horse. Now it may be that the horse and cow have one property in common, *d*. That is to say, both horse and cow are animals, and such a common attribute may be agreed upon by both disputants. Into the wider genus, therefore, it is agreed that the object will fall. Here the test whether it is an animal is less rigorous, since the attributes predicted are less numerous.

As attributes are analysed from objects, so they in their turn may lead to the conception of a new unperceived object. In the former case, *ex hypothesi*, the object predicted can be perceived, and is, either directly through the senses or indirectly through scientific instruments, based upon sensation. To these the name "perceptual concept" may be given. In the latter the possession of attributes in perceived things has led observers by induction to assume ideas of certain objects, not themselves perceivable, as an explanation of the behaviour of those objects which can be perceived.

In this class of unperceptual concept are to be grouped the Molecule, the Atom, the Sub-atom, and Ether. All unperceptual concepts must mediately be based upon the perceptual ones, but the test of the validity of their employment is the same as that of the perceptual concept, namely, it must always be asked of them whether they satisfy in prediction the essential requirements which they hypothesize in their properties.

Finally, of classes of ever increasing generality and decreasing connotation we reach the stage where the sole question is whether the perceived object is " there " at all, or is merely, as is said, " imagination."

With this question the boundaries of scientific enquiry are reached, for the answer to this problem must depend upon whether the object is or is not within the time-space process, and, in Theoretic statement, process is assumed. Short of this, however, the wider the class the greater the possibility of correlating the object with all other sensational experience, and so, of understanding it, in the sense of being able to predict its behaviour through an understanding of its attributes.

CONCLUSION :

It is thus the final purpose of theoretic contingent statement to endeavour to generalize attributes in such a way that of every object all the properties may be placed within known categories, and to correlate these categories so that they in their turn may be unified in the mind.

In Science, each generalization of attribute gives a base for still wider generalization, until, finally, we find the whole field of possible perception resolved into two elements of matter and motion, which, in their turn, become absorbed in the universal generalization of Ether in stress. Theoretic explanation, however general, is thus not different in kind from the more primitive empirical statement. In both cases attributes are predicted of objects which prove to be true or untrue in the Event. Absolute certainty in both cases is unattainable ; the most that can be

said of any scientific statement is that it will remain true so long as it fits the facts.

This is what is meant by our assertion that scientific truth is essentially contingent: it is dependent upon and explanatory of a world of perceptions.

If theoretical statement may be distinguished from the practical, it is rather in relation to its purpose than to its content. The purpose of science is to comprehend the universe in all its aspects within the time-space process. In scientific statement the universal is analysed into its attributes, and these are correlated with other attributes similarly discovered in other objects, but throughout the process the element of contingency involved in the fundaments of time, space, and cause is present and cannot be transcended.

CHAPTER III

ON FORMAL STATEMENT

INTRODUCTORY:

At the outset of the consideration of Formal Statement and its criterion of necessary truth, we are driven to examine more deeply into the nature of Thought than was incumbent upon us when sensual statement was under examination. We must observe from the beginning and keep clearly before our minds the fact that all Statement, whether its validity be contingent or necessary, is conceptual in nature; for, unlike the consciousness of sense data, which is unique and immediate, statement employs conceptions which are defined and form a continuum.

Sense data are certainly limited, at any rate among human beings, to the orders of sight, sound, taste, hearing, smell, touch, and muscular extension, but the variety of such data in combination is infinite, nor, so far as we know, are the complexes of sense subject to exact repetition. Thought, on the other hand, is unifying, and its concepts, in so far as they are identified, can be repeated in memory. Thus the sight of a particular table at a particular time is a unique experience. The idea of a table or a particular table, it matters not which, is repeated every time the word " table " is pronounced.

Now it is the function of statement to present the manifold of sense in terms of the unity of thought, but the burden of the task of such a statement varies according to whether it be sensual or formal.

All sensual statements, dealing as they do in the first place with universals symbolic of Event, have direct relation to the data they describe, and their validity is intimately dependent upon the actual fulfilment of such a description. In other words, sensual statements seek to establish a mediation between the variety of sense data and the words which describe them. Formal statement, on the other hand, is concerned only with the correlation of the conceptual relations of which sensual statement is composed, and is only concerned with Event in so far as the concepts which it seeks to make understood are themselves descriptive of sense data. Thus the appropriateness of description and classification of contingent concepts is no concern to the Formal; the task of Formal statement is to ascertain the necessary relation of one concept, regarded purely as concept, to another. Thus, while the proof of the contingent is to be found in Event, in correspondence of Thing and Idea, the proof of the Formal lies in its own consistency. Where such consistency is established, the truth is apparent, regardless of Event.

Thus the statement that the whole is greater than the part is a necessary truth. The abstract relation of wholes and parts cannot be disturbed by the contingencies of Event. In the conceptual order it must necessarily be true.

The most elementary necessary truth is to be found in the relation of essence and accident.

The distinction between the two is a nominal one, and consists in the identification of certain attributes in a definition, without which the word would not properly denote the thing described in the case of the Essential, while all other attributes in the noun complex are said to be accidental to the word in question.

As we have already seen, a statement which predicates no more than is in essence contained in the subject—"This tripod is a three-legged table," where the essence of a tripod is a table with three legs—is merely repetitive, just as its converse—"This tripod is not a three-legged table"—is absurd; such statements afford instances of necessary truth or falsehood at its simplest.

We may next proceed to the selection of some common essential attribute in several complexes, and may classify the complexes under one group, such as "wood," in so far as it contains the essential attribute of that material.

It will be observed that in sensual statement experiment and observation can never be sufficient to support anything more than an extreme probability. If the adjectival attributes a^1, b^1, and c^1 are invariably found associated in the complex noun D, there is nothing more than probability upon which to base the assertion that on another occasion a^1 and b^1 may be associated in E without c^1 being present. Seven orders of wood may burn, but the eighth may prove incombustible, and the effect will be to thrust inflammability as an attribute out of the complex "wood" and relegate it to an accident of wood, though it may still remain the essence of a class of wood or be a proprium.

The employment of a noun, however, assumes that it has some essential attributes which alone make it definable. Thus, once an essential attribute is incorporated into a noun, the performance of that attribute in the verb in the event becomes a necessity. Thus nomenclature is found to consist in the employment of complexes of attributes in words, which attributes contingency has shown to be universally associated together.

It is the observation of universal sequence of one sense datum to another which permits the second to be embodied as the essence of the first. For example, in the statement " Stones are heavy bodies," so many stones have been seen to fall possessing those other qualities which we associate together that the word " stone " has been invented to cover them, and one of these is heaviness. While heaviness is but an accident of stone, the statement is contingent; when heaviness becomes essential, the statement becomes necessary.

The accidents of a sensual noun of event are various; they can never be less than the sense data demand, but, with the appearance of nouns descriptive of organa beyond the sensational level, such nouns as molecule or atom, the attributes which are themselves arrived at by a remote theoretical process become rapidly less, and the adjectival nouns descriptive of such attributes similarly diminish, so that when Ether is reached, the attribute and its complex, the noun, the Thing, and its Event, have become almost identical.

From Ether, which may be taken to be a noun compounded of few attributes, we shall come to a noun which is its own attribute; by the gradual elimination of complexity by necessary logical process we shall arrive at a point where noun,

adjective, and adjectival noun coincide. This static condition, which we shall call Pure Substance, we shall discuss more closely hereafter. By necessity of thought, the increasing correlation of attributes into classes of increasing generality irresistibly leads to such a conception.

So far we have spoken of the noun and its qualities in process of generalization, but a similar treatment in logical process necessarily awaits the verb. The verbs of the nouns descriptive of sense data are as various as the adjectival attributes which they describe in process of becoming.

Below the sensational, in the unperceptual, the range of the verb and its quality expressed in the adverb become restricted proportionately. The laws of chemistry and physics are far more exact of ascertainment and less various than those of Biology or Sociology. So therefore in Ether, with the coming identification of the noun and its attributes, the verb and its possibilities also become identified, so that, finally, the necessary process of thought compels us to assume in the place of particularized verbs a universal dynamic to which we shall give the name of Will.

Necessity thus reveals itself, in the logical process which seeks ever to classify in groups of wider and wider applications, as a process which must finally end in two quantities, the one static, the other dynamic, comprehending all Things and all Event. Time and Space, the intuitive forms of sense in which the unique particulars of sense data are mediatized and rendered continuous, disappear in the final generalization. In Ether space becomes lost.

THE NATURE OF THOUGHT:

In the last chapter we had occasion to trace the growth of reason as an ingredient of consciousness from the psychological standpoint, but it now becomes necessary to probe somewhat deeper in order to understand the implications of formal statement.

We may start with the assumption that all consciousness is in the first instance a matter of immediate sensation.

Sense data are presented in every case to an individual, and such an individual must therefore possess as one of his properties some power of spontaneous inhibition of effect to cause. In the reflex of the unicellular organism, which flinches when perturbed, there is an element of individuality. An organism, such as a stone, when physically affected reacts, either by a more or less complete resistance to the impact or stress or by a surrender to the force, which thus results in a more or less permanent physical or chemical alteration of the stone, and this inertia constitutes the stone's non-causal personality, but in the case of the amœboid the stimulus may be mitigated so that it does not destroy the continuity of the organism.

The distinction is one of degree rather than of kind; but it is important to recognize that at a certain stage in the evolution of organisms a regulative individual begins to appear, which, by interpreting external forces in forms of the organism's capacity to absorb them, tends to minister to the continued being of the organism rather than to its destruction.

At this early period of sensation, the consciousness is very slight; the interpreted sensation differs in only very slight degree from the received

impulse: the sense datum, that is, is not very different from the mechanical impact, such as a stone, if it were conscious, would receive; but, with the growth of specific organs of sense, the sense data become increasingly ordered and collated according to the receptivity of those organs.

Thus in the amœboid a datum of sense is presented to the individual, but such datum is almost homogeneous. In the more complex animals the data become more ordered and more various.

The growth of a specific organ of reference of data, the brain, produces in animals a conscious world coloured more and more by the personality of the recipient and the manner of the reception. In instinct this automatic correlation of sense data reaches its highest point; the subjective element in the data is very strong, for thought has not arisen to correct the subjectivity of the correlation, while the correlators themselves have reconciled the uniques of sense in the unity of the instinct to such an extent that the reaction of the animal is so dependent upon its own personal characteristics as to have become almost mechanical.

It will be noticed how, throughout the growth of this subjective interpretation of the external world, the purpose of the particular animal is more and more prominent. The sensations come to minister to the purpose, and, so long as they satisfy the need of the animal, an almost static equilibrium is achieved.

At this stage there appears, more particularly among the simian animals, a new aspect of consciousness, that of empirical thought.

The experiments of Professor L. T. Hobhouse

(*Mind in Evolution*) have brought him to the conclusion that the higher animals can learn by attention to a simple sequence of events. Their behaviour could not be described in all cases as a uniform motor reaction to a perception, but rather suggested a combination of efforts to effect a definite change in the perceived object. In other words, the subjective interpretation of sense data at this stage creates a second element in consciousness, midway between the unmediatized uniques of sense data, correlated only in the orders of sense (sound, sight, etc.) ; an empirical unification which is something more than unique sense data and something less than conceptual thought.

The defined concept, it is believed, is the direct product of language, for it is of the essence of the concept that it be subject to definition which will distinguish it in the consciousness from other conceptions, and such definition is scarcely possible without the use of words as symbolic instruments.

Language in its origin is onomatopœic, and operates by way of revival of sense data after they have occurred. Its use involves the rise of an element in consciousness which is not merely sense data presented objectively, and subjectively received according to the orders of sense, but a consciousness self-stimulated *ab initio*, presented, it is true, in terms of sense by the Self to the Self, but only mediately dependent upon sensation. It will be necessary for our purpose to carry this examination of the growth of thought further ; but, for the moment, it is sufficient if we have shown that the division of consciousness into sense data and thought is one of degree only. The manifold in unity is to be found in the ordering of sense data according to the qualities of sense.

The growth of sense itself, as distinguished from the unconscious, is similarly gradual and continuous.

Thus we believe the idealists to be wrong when they finally sever sense data from thought, whether ultimately they absorb the sense into the thought or rest content with an irreconcilable dualism.

THE NECESSITIES OF THOUGHT:

Applying the historic method, it is at the threshold of reason, where language is first employed, that we should hope to obtain some insight into logical necessity, nor will researches in that direction prove altogether useless for our purpose.

Communication between animals or men can certainly occur without the use of language, but such communication lacks that common acceptance of meaning without which persons can scarcely communicate their sensations to one another at a time when the stimulating cause is absent. Though it is true that in nearly every case the origin of words is to be found in the appropriate cry which a sensation calls forth, yet words in language rapidly become isolated from such cries and come to be used solely as symbols of event.

Now, regarded as symbol, each word must be somewhat more general than the event it describes, for in communicating a word to another, or in referring words to one's own memory, a recognition of similarity of events occurring to the other person or to one's self in past times must always be present.

Thus, the most elementary word is a generalization of Event, and it is this element of generalization which distinguishes sound in language from crude exclamation. But, having said

this much, it must also be made clear that thought, like sensation, is but a part of consciousness, and, just as each sense datum concentrates and limits the consciousness in the sensation, so each thought defines and determines the logical knowledge within the conception.

If logical thought arises in the first place through the use of symbols, it is equally clear that symbols are themselves sensational. Language is the creature of sounds and sights; in thought such sounds and sights are subjectively presented by the Thinker to the consciousness, and, in the process, the Knower and his knowledge become separated and defined in a manner which is not possible in crude immediate sensation.

The problem of logical symbolization in the contingent is to present symbols representing qualities in Things, which qualities will be justified in the Event. We have learned how the use of symbolic properties at all is only possible in a causal world where the qualities produce like effects, for, if the symbol is an uncertain variable, it becomes valueless and impotent. The problem of necessary truth lies in the arrangement of such symbols only; necessity is only concerned with Event in so far as the symbols which are its stadia themselves represent some further particularity. Necessary statement is therefore wholly copulative; in it change and event find no place; the relationship of symbol to symbol is its sole concern.

The purpose of reason is to generalize the uniques of sensational experiences and to find common qualities in them, and this object it performs in the following manner. In the first place, as we have seen, the constitution of the consciousness is such that under no circumstances

can it receive unto itself anything other than uniques, that is, definite sights, sounds, or other data of sense which it may utilize as symbol. In elementary language of savages and children the sound received is usually onomatopœic, so that the sense datum of experience and the sense datum of the sound of the symbolic word are identical.

It is scarcely necessary for our purpose to trace the gradual separation of the thing as sensation from the word as sense datum. That which is vital to appreciate is that the word or sight is symbol, no less than the Thing is sensational in the first instance. Word differs, however, from sensation in event in this, that, though itself sensational and unique, the logical which is based upon it may become general in a manner in which the sensation itself never can be.

The generality of Thought, however, arises only in its results; each concept in itself is, in the process of conception, unified; every universal, regarded as a word, is unique and particular: it is the varying possibility of its application which renders it general.

Thus the universal "Horse" as sound is unique, and as concept is originally unique also; it is only in the possibility of its application to various individual horses that it becomes in any real sense general.

This paradox then arises, that no sooner is a concept thought of than it is unified and rendered unique; it is only in its application in reason that it becomes general.

In other words, it is the variety of the application of a universal which alone constitutes its generality, for the mind does not love generals,

and it is only in the nascent state, when a varying possibility of application exists, that words become various in their possibility. Thus it is the potentiality of the word in reason which constitutes its generality; regarded merely as word and as class it still remains unique.

The passage of the symbolic in language is as follows: from sensation to word, from word to unique universal, and from universal in logical process to generality. We have spoken much of the word in application, for we see that occurrence in the logical is no less obvious than in the sensational, which occurrence, in the logical, we cast into the Kantian categories of time and space. Thus it is in the dynamic process of thought that the unique universal becomes generalized, and it is in the accuracy of the alembic that necessary truth arises.

LOGIC:

The quality of logical process is very clearly seen when formal statement is contrasted with definition. Formal statement, being copulative, has its origin in definition. In its simplest form definition explains a word by endowing it with the meaning with which it is generally associated, as in the phrase "A line is that which has length without breadth"; or, secondly, it may be that the definer seeks to impose a meaning on a word which is not generally so understood, as in the case of the terminology of scientists or lawyers; or, thirdly, the definer may propound a neologism and deliberately use a new word in a new sense: in all these instances the statement "A is B" is not a judgment, but an assumption, and as such need not detain us at this stage. The problem of

necessary truth, however, immediately arises when from the assumed definition, itself a symbolical logical idea, other logical conclusions arise.

Thus, bearing in mind Euclid's definition of a line, if I assert that any number of lines laid side by side cannot constitute a surface, since none of them has breadth, I am making a statement which, apart from event, in necessity is either true or not true. Thus a mathematical statement is something more than a mere definition: it is the necessary logical consequence of a definition, but is not in itself only the definition, since it is derived from the definition by a logical process which may or may not be true.

If we analyse our statement with regard to the line we reach this result: a line has length without breadth—this is its essence: therefore two lines have length without breadth, for the word "line" is a general covering any number of uniques which have this essence in common; but a surface has breadth and length without thickness, consequently lines (which lack breadth), being laid alongside of one another, can never constitute a surface.

Then take the following contradictory proposition :—

> A surface is composed of adjacent straight lines.
>
> A surface has length and breadth, but no thickness.
>
> Therefore, having breadth, a surface can be divided into an infinite number of adjacent straight lines.
>
> Therefore a surface is composed of an infinite number of adjacent straight lines.

Both these conclusions cannot follow from the same definition, and consequently we see that the difference between a statement involving necessary truth and a mere exfoliated definition is that in the former case a logical process is necessary, which immediately raises the problem of validity, whereas in the latter it is not.

The conception of necessary statement depends therefore upon an understanding of that logical process which transmutes the symbolic unique word into a generalization, and thereby produces idea, which, in its turn, may be reduced again into the uniques of contingency.

Obedience to the necessities which the use of thought involves is among the preliminary requirements of formal statement. Of these the most fundamental are those of thing and event, of static and dynamic, for without these two preliminary assumptions, represented conceptually by noun and verb respectively, logical process would lack the material on which it must operate.

The second assumption of formal statement is that the contingent world of sense data is causal, for logical process operates by the use of symbols themselves, not variables, whose employment would be rendered futile if that which they symbolize were to have no certain or continuing properties. Granted these three elements of Thing, Change, and Cause, the logical next proceeds to ascertain common qualities in things which in varying combination will produce varying effects in the Event.

Thus, if a particular table be a complex of qualities *a*, *b*, *c*, and *d*, of which *a* is the accidental variable, so that another table will be *s*, *b*, *c*, *d*, and yet another *t*, *b*, *c*, *d*, the complex *b*, *c*, *d* will represent the universal table, itself, as we

have seen, a unique concept in the mind, until, in the logical process, it becomes *a, b, c, d; t, b, c, d,* etc.

It is this use of the *b, c, d* applied indifferently to *a, s,* or *t* which constitutes the universality of the concept.

It is not the generality of the complex but the generality of its application which renders it universal.

The possibility of error of description need not here detain us, for that is an error of contingency rather than of necessity; we may assume a table to be correctly generalized into its qualities, and ask ourselves how these qualities may properly be treated to achieve necessary truth.

The handling of logical qualities correctly, so that their resultant logical conclusion when de-symbolized into contingency satisfies contingent expectations in the event, is the task of logic, and its proper performance affords instances of necessary truth.

The processes of logic and mathematics which, given correct contingent classification, ensure truth in the handling of the symbolic logical, need not detain us; it is sufficient for our purpose to realize that, apart from the truths of contingency which can be verified in the Event, there exist the logical and mathematical truths of necessity which form the assumptions upon which reasoning and consequently metaphysic are based.

From this recognition of the existence of logical and mathematical assumptions it follows that necessary statement, like contingent, can never hope to attain to the metaphysical stages, for, in the last resort, it cannot explain in reason the assumptions upon which reason itself rests.

The logical comparison of relations in knowledge, however subtle or extensive such comparisons may be, can never hope to extend beyond Relation itself, and consequently, within Knowledge, the intuitive necessities of thought must remain insoluble in themselves; whether in metaphysical statement we can hope to transcend these limitations is the subject of our enquiry.

CONCLUSION:

The reconciliation of the plurality of sense data to the unity of thought, which has proved so great a problem to the epistemologist in the past, has been simplified by the consideration that sense data themselves, by the very fact that they present themselves in one of the six orders of sense, are to a various extent unified at the outset.

Sense data therefore lack that complete separateness which many philosophers have affirmed of them, and, on the other hand, it has been shown that the concept is by no means that unity which tradition would have us believe. Thought is only possible at all by symbolization, particularly such symbolization as is produced by language; the process of thought may not be inaptly described as a process of talking to oneself.

Now, talking to oneself involves the internal presentation to the mind of subjective sounds and sights which, in the first place, are presented as pseudo sense data, much in the same manner as are the objective sense data of that part of consciousness which we describe by reason of its causal nature as objective. Thus thought itself is a process and not a stadium. Secondly, the case of hallucination, where imagined sense data

are assumed to be causal and so "real," provides an example of a position midway between the objective causal "real" and the subjective "thought," such as would not exist were thought and sense irreconcilable. A sound is heard in the ears which is in fact subjective volitional and non-causal; it may well be mistaken for a causal "real" sound without, yet it is in fact subjective and lacks a true perceptual base. Such a sound is not recalled in thought as a memory; it is presented to the hearer in a pseudo-causal manner, and so lacks that element of Will which is of the essence of self-conscious memory and thought. Thus the distinction between sense data and illusory images is a contingent one; both are non-volitional, but the former can be verified and is causal, the latter fails in the event.

Next we must distinguish between memory as pictorial image or sound and the concept proper. In memory, and in the formation of images of sense, the will is present, but in the former case, as in the early days of onomatopœic language, conscious symbolization is lacking. Nevertheless the formation of the subjective sense datum of sound is the first indispensable ingredient of language and so of reason. Thus again we see that the change from sense data into thought is a gradual one.

It is important for us to realize how far the necessary assumptions of logic and mathematics are self-evident and how far they are founded upon contingent observation. Thus the necessary axiom that the whole is greater than the part would certainly be unintelligible in a world in which sense data, involving various degrees of magnitude, did not exist. Thus again we see

how that part of consciousness which we call thought is explanatory and symbolic of that which we call sensational.

The necessity, such as is manifested in the Formal, is mediately, though not immediately, dependent upon Event, and assumes a contingent world of acquaintance as the subject of its description.

Thus, finally, we see that both types of statement, the sensual and the formal, are in themselves insufficient as explanation of Totality, for the contingent statement fails to explain the necessities of the thought which verify the sense data which are its subjects, while the formal statement, while it does examine these necessities in logic and mathematics, takes for granted the manifold sense data which it endeavours to reconcile and correlate.

An explanation of Totality must therefore be prepared to be both contingent and necessary. It must endeavour to reconcile the uniques of sense in one unity, and, at the same time, must explain the formal method of that reconciliation.

It will therefore be apparent that only those qualities whose truth is both contingently true of sense data and also necessarily involved in the very process of achieving contingency can be adequate to describe Totality in its final phase.

It is thus the duty of philosophy not only to examine the bases of sense and thought, but also to examine the examination in itself. To such an examination only can the title of metaphysical statement be properly given.

CHAPTER IV

ON METAPHYSICAL STATEMENT

INTRODUCTORY:

At the outset of the study of Metaphysical Statement, we must repeat that philosophy can only operate by means of verbal explanation, and from the conclusion that explanation may consist either of contingent description or of formal truth, we at length reach the metaphysical problem of explaining Totality.

A Knower having been assumed to whom sensation and thought may be presented, we have taken his consciousness itself as a unit, and, in considering sense data conceptually, we were led into the assumption of time, space, and relation as a means of knowing them. We have further learned that Knower and Known cannot be correlated contingently, since a capacity to know must be posited before the Knowledge presented to it can be examined.

In contingent explanation, the presence of other Knowers, to whom the knowledge of the author of an explanation can be conveyed in words, has also been taken for granted. Moreover, Things in consciousness as sense data and the notion of Things in Themselves apart from their recognition in consciousness have been unrelated,

that is, both have been assumed to exist, and our explanation has, so far, not been concerned with their relations to one another.

It is the purpose of metaphysical statement to explain such elements of Reality as remain uncompassed by contingent or necessary assertion. At the outset it is clear that the test of truth which does service in the scientific field will not avail in the metaphysical, for metaphysical bases can none of them be the subject of Event, and, therefore, mere predication of properties or of truth by correspondence of idea and event cannot satisfy the demands which metaphysical explanation makes upon us.

Our first task, therefore, is to discover what order of truth will satisfy philosophical requirements, so that of any metaphysical statement it may be declared whether it be true or false.

Now, unless our examination of words and statements has been in vain, we shall have reached a position in which we shall be able to understand some of the limitations of metaphysical explanation.

A survey of the linguistic apparatus at our disposal should teach us certain facts which we can no longer afford to ignore regarding both the verbal medium in which our statements must be made and the capacity of the recipient by whom those statements have to be interpreted. For if "metaphysic" is a word of certain import, connoting definite meaning, there must underlie every metaphysical system some common purpose, and that purpose lies in the attempt to explain Totality. Yet, as metaphysic can only proceed by statement, the explanation of Totality must always obey the necessities of all assertion; that is, in Totality,

as in the contingent, there is always a necessity for that subject and predicate which assertion demands.

In all assertion not merely repetitive, the statement "A is B" involves in B not only the essence of A, but some differentia distinguishing B from A; and this is true, not only in sensual statement, where, in the Event, results are predicated and require Event for their fulfilment, but also in the case of formal statement, where the differentia are to be found in a wider or narrower attribution in the predicate than in the subject.

Now, the subject of Metaphysic is all possible Knowledge, and if, of all Knowledge, whether it be achieved by direct acquaintance or by judgment, predication is to be made, the question arises, What can be the predicate of all Knowledge, and what are its differentia? To this difficult question an answer may be found. In metaphysical statement, the Subject, all Knowledge, has for its object of explanation all Being, and the differentium is the transition from the totality of Knowledge to the totality of Being.

A few examples will suffice. We may take the metaphysical notion, "The World as Will." This world is the world of all possible Knowledge, and the predicate Will transcends possible knowledge and is Being. Similarly, in transcendentalism, "The World as Absolute" predicates the Absolute as Being which exceeds all possible Knowledge. Solipsism, a belief in an ultimate Ego, and a belief in ultimate Noumena, alike also predicate Being beyond Knowledge.

The nature of the metaphysical Subject, Knowledge, will be analysed hereafter, but an immediate difficulty is caused by the problem of Being

transcending Knowledge, which cannot be entirely dismissed for future enquiry.

Words have meaning only in so far as they symbolize varying properties, and the question which forces itself upon our attention is this: What possible properties can be given to the object Being outside Knowledge which will endow it with meaning?

We may take as words of Being those whose nature transcends contingency; such words, for example, as Absolute or Substance. In the case of Substance, we may say that primordial Ether, stressed, has contingent property and meaning, but that completely homogeneous Protyle in Pure Substance is propertyless or is possessed of all property. So also in the Absolute, though in the trichotomy the idea and its negative have relation to one another, their final synthesis in the Absolute would appear to absorb their distinguishable characteristics.

Have these words "Substance" and "Absolute," then, any rational meaning at all? Or do they rely on emotion for their significance? On the answer to such a question must depend not only the particular system of metaphysic based upon them, but metaphysic at all; for, if Being beyond Knowledge be wholly incomprehensible, metaphysical statement can be no more than Knowledge reasserting itself, which can never exceed Formal statement; or Knowledge analysing its parts, which is no more than scientific contingency.

Now Being, *ex hypothesi*, cannot be the subject of Knowledge, for, if it were, it would itself be Knowledge and not Being, and therefore, in this sense, it is certainly unknowable. How, then, is Being recognizable? The problem may perhaps

be considered from this standpoint: if Being is unintelligible, words of Being, such as Substance and Absolute, will be alike unintelligible, and will therefore be indistinguishable rationally. This, however, is not the case; the synthesis of all sense data in Substance is other than the trichotomous synthesis in the Absolute, and the difference between these two ideas will serve to endow them with meaning if nothing else will.

Here, then, we have two ideas, Substance and Absolute, both outside possible knowledge, both pure words of being, yet both possessed of distinguishable rational significance.

The valid predication of Knowledge in Being is Reality, and the truth of such Knowledge is metaphysical truth, which is thus distinguishable from necessary truth and contingent truth in that, to be a truth of Being, it must include and surpass all minor validities.

RELIGIOUS TRUTH:

The problem of metaphysical statement can best be approached by a consideration of those assertions commonly called religious, for, in Religion, in its ontological aspect, as in Philosophy, under the name of supernatural or eternal, predications of Knowledge in Being are made, which predications are more familiar than the more subtle philosophic ones.

Religion is based upon Faith; apart from that aspect of religion which is concerned with conduct, religion provides an account of Totality which relies not so much upon reason as upon belief for its validity. We have only to ask why a particular man believes a particular religion to

learn that it is because it satisfies his emotional needs and provides that feeling of mutuality between himself and Totality which he requires. Thus religion must largely be based upon temperament. The spiritual needs of different men will be satisfied by religions of different kinds; indeed, it is difficult to see how men of widely varying spirit could be well satisfied, emotionally, by exactly the same religion. In this sense religion is certainly pragmatic, and a particular creed is true for a man in so far as it satisfies his spiritual requirements. The saying that there is an element of truth in all religion would mean, in this respect, no more than that all men were agreed in possessing certain spiritual requirements, and in needing similar beliefs to satisfy them.

Religion therefore is "true" for the believer in so far as it brings him into sympathy with the world in which he lives; from which the important converse follows that a religion which does not yield this satisfaction can scarcely be wholly true for the would-be believer.

The Christian justification for Evil in the need for freewill is a good example, though by no means the only one, in this connection. According to this explanation, Evil is felt by sensitive men to be unbearable, but an evil that gives man an opportunity to overcome it in order to achieve a wider good is less insupportable, and so the notion of sin existing in order that, by freewill, man may find his way to grace is attractive to the religionist. To the devout it may be said that truth is that which satisfies.

Now it is clear that such a truth must be something more than contingent; to be in accord with Totality, mere predictive contingent truth is

insufficient, and thus it is that the old struggle between science and religion arises.

Much of the polemic which has been directed to this contention might have been avoided had it been recognized that the pragmatic truth of religion and the contingent truth of science have no common content, and, indeed, are related to one another only in a community of name.

We must now trace the growth of ontological statement. In the alogical condition no desire for explanation can arise, because, at this stage, no notion of a conceptual reality external to the perceived is present. With the growth of conception, however, a second ingredient of consciousness, that of idea, arising from detached attributes, begins to exist side by side with the sense data, and this dualism results in a desire for an explanatory correlation of the two, not unlike that which has already produced alogically the concept itself in the correlation of sense data.

Now this emotional desire for correlation of sense data and concept as orders of thought is of a very different order from any intuitive correlation, however general, which can take place as between one sense datum and another. The latter contingent correlation, which evolves into theory and science, we have already examined. It is the former which now requires attention.

The attempts at explanation in the early stages of man's development are more religious than philosophical; that is, they depend upon the emotional satisfaction which they yield to the primitive mind, and indeed are less rational than the early scientific contingent practical generalization of the savage.

Conception, however slender, early develops a

rudimentary need for cosmic explanation through the growth of contingent experience; perceived events, once named, are seen to occur in order: the cloud produces rain, the sun heat, invariably, and so forth; and it is the puzzle which this idea of order produces which calls for an emotional solution. In the religion of animism in which most primitives find satisfaction, the causes of all Event in Knowledge are assigned to spirits who transcend Knowledge and are therefore Being. The cloud turns to rain in obedience to its spirit; for a similar reason the sun gives light; sometimes the spirits are detached from their particular objects and located in special materials, such as the sacred pebbles of the Australian aborigines.

It would probably be beyond the power of primitive man to describe these spirits further; the mere naming of them probably gives them as much significance as the simple savage requires. Almost from the beginning, the name is taken as its own explanation, and in itself affords almost complete satisfaction, or the symbol of the spirit in drawings may provide the necessary quietus to the desire for explanation.

In particular the life spirit of man commands attention, and the idea of transmigration of the spirit into other persons soon comes into vogue. These spirits may be conceived in part in Knowledge, in part in Being, and are at times almost sensational, and by an unconscious inversion are themselves regarded as the subject of physical persuasion, and may be driven by force or terrorized into submission. The spirit is thus both the cause of events and itself a kind of reflection of them.

In its latter capacity, the ghost still survives as a relic of animism; from the former is derived the idea of gods who have to be placated or flattered or even insulted, that they may direct events in accordance with man's desire.

A more philosophical theism may be perceived to be developing in the elemental idea of the universal concept suggested in the Totem; wherein, for example, the Bear or some other animal is sacrosanct and is regarded as the prototype or god of all bears. The same notion occurs in Genesis in the suggestion that God made man in his own image.

At this stage the common attributes of uniques are deemed to establish a physical connection between them, whereby, by maltreating the property or an effigy of the hated object, the person himself is injured.

The attributes of things are themselves imaged as perceptions, so that to injure a person's property makes the possessor immediately feel affected, or, by imitating a physical occurrence, the physical event is itself produced. In "whistling for the wind" the idea of producing a gale by imitating the noise of it survives.

The animistic spirits become co-ordinated in the more general gods of polytheism. At this stage a sufficient generality of attribute is discovered to justify the idea of one ruling spirit for a comparatively large class of phenomena; the sun, the sea, the rivers, the forests, etc.

Finally is found the idea of one supreme God or Spirit who has within him all the powers and significance which were formerly distributed among all the objects in animism. Thus, in changing from the polytheistic idea to monotheism, the

theologic passage has been made from the many to the one.

It will be observed that the unity so accomplished has not fundamentally altered the assumed supernatural functions beyond Knowledge. In animism, each particular in knowledge contains its own cause in Being; in monotheism, one embracing Final Cause necessarily and contingently determines all Event.

In earlier monotheism this universal god is seen as a ruler among minor deities, but the notion of minor deities becomes gradually less potent—lingers in the belief in angels, and in divine men, such as kings or saints, until it disappears altogether.

Throughout the process we have seen that the satisfaction which each particular doctrine has given to man, its pragmatic value, has consisted in its capacity to satisfy the spiritual and intellectual needs of mankind. As those needs have been enlarged, the creed has undergone modifications; in every case the religious explanation and the truths which have been enunciated have had for their purpose the reconciliation of man's Knowledge to the totality of Being.

It will be remembered how, in considering words, we had cause to speak of their emotional qualities; the study of word worship, which we have seen developing in animism, will make this matter clearer. At a very early period a sort of verbal animism prevailed, in which the name of the thing became, in a sense, its guiding spirit. To speak the right words and to pronounce them rightly are essential to the ritual. Solomon knows the names of the spirits and gets command over them. In the Egyptian *Book of the Dead*, the dead man says to Osiris, " I know thy name and the names

of two-and-forty gods," and this gives him power.

When it is remembered how, in naming perceptions, we connote their attributes and so contribute to an understanding of them, it is not surprising that man should thus early have confused the cause and the effect, and deemed the word itself to be the potent factor.

Thus do we find the legend that in the north of the Baltic was a country of amazons, because a race of Finns living there were called Quaens. So also because Abo, the ancient capital of Finland, was called Turku, the Swedish for a market-place, it was long asserted that Turks lived in those parts.

In China the written symbol is still sacred. A paper containing writing must be treated reverently. It is criminal to use printed matter to strengthen boots and bind books. In the sixth court of purgatory, sinners must expiate the crime of showing no respect for written paper. The Jewish phylactery provides a further example of name worship. Similarly, among the Mohammedans, the magical value of texts of the Koran is widely believed in. Koranic texts have been employed for medicine, the patient taking, as a drug, water in which the paper containing the holy writings has been washed, or even, in the last extremity, he will swallow the paper itself. With us, the newspaper and political literature largely depend for their popularity on a similar false verbalism. On the whole, those words which do not evoke emotional satisfaction in their content are repugnant, and the attachment of unpleasant words to a philosophic system will go far to ensure the repudiation of the doctrine.

Dynamic words suggestive of promise, " develop-

ment," " absolute," " God," " soul," " freewill," are thus emotionally attractive to most recipients, while " substance," " matter," " destiny," static words, suggestive of inertia and passivity, are emotionally repellent. The reason for this preference is probably to be found in the alogical correlation out of which the use of words grows, for words are employed primarily in so far as they serve a purpose.

In religion, therefore, itself a method of emotional satisfaction, words are used largely in their emotional sense. Whole theological works are constructed on the basis of a cunning selection of emotional words, nor have all theories of metaphysic been free from this perturbative influence. Thus, in religious statement, the validity of the predication of Being from Knowledge is subjective. This function of religion is delightfully expressed by the following verses which appear embroidered on an eighteenth-century sampler :—

'Tis religion that can give
Sweetest solace while we live,
'Tis religion can supply
Solid comforts when we die.

PHILOSOPHIC TRUTH:

In addition to primitive speculation as to the supernatural, the contingent demands of the struggle for existence evolved a primitive science, as well as an early superstition.

In this more urgent need, owing to the absence of emotional aberrations, words came to be used far more dispassionately and almost solely as instruments of contingent truth, and the test of the validity of the explanation became not

so much a question of emotional appeal as of practical expedient. From this aspect also arose conjecture as to Being, a speculation founded in this case not so much on the mystic as on the scientific plane.

Curiosity as to Being in this connection is thus in its earlier stages more nearly related to science than to religion, and though the questions which it asks soon come to transcend those of science, the answers are based on an experiential foundation.

In the broadest sense it may be affirmed that the first persons to approach the problem of Being from the standpoint of reflective knowledge founded on experience were the Greeks.

The Origins of philosophical speculation are less respectable in lineage than those of religion. They may be traced to the sixth century B.C., to the time when Monotheism both in China and among the Hebrews was absorbing the old polytheistic religious ideas. With the early Ionians, the objective physical world is observed through reason, and we note a definite endeavour to discover some general attribute, some Substance to explain its Being. The fact that Thales thought he had discovered this in Water is unimportant; what makes him significant is that, in seeking for reality, he was not content with mere subjective emotional satisfaction, but employed the reason and not emotional faith as a means to understanding.

If we compare the ideas of Diogenes of Apollonia, to whom the explanation of Being has become neither water nor air but a vital principle in all things, with the similar theistic notion of spirit, we perceive the great difference

between religious and philosophic truth. In the latter case the conclusion is derived from an observation of contingent phenomena and their attributes, in the former an emotional desire for supernatural order produces the belief.

Diogenes dismisses alike the water and the air substance of Anaximenes as not general enough, and the fundament of Reality is sought entirely through reason. The appeal of a Substance of air or water is not discussed or entertained on emotional grounds; his qualification of Thales' doctrine is wholly rational. In Pythagoras and the mathematical school the search is still for the impersonal fundament of Reality. Problems of judgment rather than of acquaintance, of unity, plurality, and number arise. Among the Eleatics the basis of thought is discussed, and in Parmenides and Zeno scepticism arises. With Heraclitus the nature of Knowledge itself comes under consideration, with Socrates the nature of method, with Plato the relation of Knower and Known, and with Aristotle metaphysic is finally distinguished from science.

The modern philosophic systems most nearly resembling the religious are those to be found grouped under the general name of Pragmatism, systems with which the names of Pierce, James, Dewey, and Schiller are most closely associated. The saying of Protagoras that man is the measure of all things, upon which the pragmatic idea may be said to rest, reveals its kinship to religious ontology.

Whether the categories Time and Space or Things and Attributes are consistent in themselves is not essential; from this standpoint they are in fact useful and work, and to that extent are true.

Utility and not consistency is here the final test of truth, from which it follows that what may be true to-day may be untrue to-morrow. Truth, according to the pragmatists, is not born but made: if an idea is productive, that is its truth.

It may be objected that the pragmatic idea of truth is merely contingent and not metaphysical, but that is not entirely the case. Pragmatism, whether ultimately sound or not, is a theory of Being; that is, it gives to Knowledge a predicate beyond itself, and its insistence on its working capacity gives a value to Being which absorbs both the contingent truths of acquaintance and the necessary truths of judgment that operate within its system.

The recent researches of Cantor into the nature of Time have thrown doubt upon the necessary subjectivity of Duration. The principles of Relativity as enunciated by Lorentz, Einstein, Poincaré, Bertrand Russell, and others, have also shown us the true nature of infinity of collections, and so subjected the Kantian categories and the paradoxes of Zeno to analysis, and the pragmatist will aver that the truths of Time and Space are, like all other truths, a matter of the satisfaction of need.

The distinction between the pragmatist and the religionist is this, that while both rely on the satisfaction of subjective need, the former will demand a rational satisfaction, while the latter will need an emotional one.

It may be objected that these requirements cannot be entirely separated. On this very point controversy has broken out among the pragmatists themselves. James apparently would justify religion rationally as a satisfaction of intellectual

as well as emotional need. James, indeed, would appear to assert that the satisfactory consequences of an idea such as belief in a personal God are a sufficient rational justification for believing Him to be true. Thus, on the question whether the world has a spiritual designer, James has written: "If not a blind force but a seeing force runs through things, we may reasonably expect better things." This vague confidence in the future is the sole pragmatic meaning at present discernible in the terms "Designer" and "Design."

According to James, therefore, Ultimate Being in Designer and Design is predicated of the presence of Hope in Knowledge. But this satisfaction is in the last resort emotional and not rational. It is in this manner that the Jamesian Pragmatism is akin to religious statement. Dewey, on the other hand, in his essays on experimental logic asserts that the only ideas worth considering are those which can be verified by practical experience. He affirms "the theory that ideas, as ideas, are always working hypotheses concerning the attaining of particular empirical results and are sketches of method for attaining them." Thus to Dewey metaphysic can never exceed contingency.

Whether his statement be true or not, the criticism at least may be made at this stage of our enquiry that such an assertion ignores the "necessary" thought contained in formal statement, and, since Dewey will scarcely deny the existence of such a class of statement, his metaphysic does not cover his whole Knowledge, and he therefore asserts a Being of Knowledge no greater than the Knowledge itself. In other words, his statement is repetitive, and asserts no more of contingent knowledge than that it is

contingent knowledge itself, and thus his theory is the negation of metaphysic altogether.

In the next stage of increasing insistence upon the rational element we meet the system of Bergson ; in this philosophy contingent and metaphysical statement are still identified in part, but not wholly, as is the case with Dewey.

It will be remembered how, in contingency, Time and Space are assumed as fundaments. In Bergson's metaphysic Duration still remains real, though Locality disappears from final Being. Time may be conceived either as a mere mental symbol, in that, just as things lie outside each other in space, so their states may be considered to succeed one another in time ; or we may consider Time to be a true Duration in Being, that is, we may think of our life as an epoch of absolute duration, not flowing past anything, but itself, in its process, the criterion of all other flux.

It is this latter notion of the ultimate reality of the flux, and so of Time, which Bergson supports : pure Time, he asserts, inheres in the living, and in this sense he connects contingency and metaphysic. Thus, to Bergson, Time is ultimate Being, and is therefore itself unexplainable, and thus his metaphysical statement consists in predicating of Knowledge its own continuity in Being. Bergson is thus less repetitive than Dewey, in that between Knowledge and Being he introduces Duration as differentia, but to Bergson, as to the Pragmatists, Truth is a value that we ourselves give to our ideas, and that value constitutes its being. This idea of truth we may call generally the pragmatical.

The " correspondence " idea of truth which was held by the earlier empiricists is no more than

contingency upon the philosophic plane. The reason why contingent truth is not itself metaphysical is because it relies upon assumed event which has not itself been explained.

If, however, an ontological belief in things in themselves be established, either in its entirety, as with the Ionian Greeks and the New Realists, or as regards the more primary part of the attributes perceived, as is the case with Locke, the events themselves become Being, and truths about them which are verified in the Event, that is, truths of correspondence, become metaphysical as well as contingent, since through the reality of Things Event has now transcended Contingency. These empirical schools, therefore, in asserting the metaphysical truth of correspondence, either assert a Noumenon also or their statements are not metaphysical. In fact, in Locke, the noumenal element is asserted, but of the Scottish and associationist schools it cannot properly be said that they are ever more than contingent and psychological. Thus, if the external world be noumenal in Being, the contingent truth of correspondence of idea and thing may be metaphysical, but not otherwise.

We have considered briefly the pragmatic and correspondence theories of truth; the third and, until recently, most generally accepted view of metaphysical truth is that which relies upon harmonious coherence in the idea, and, just as the truth of correspondence involves noumenal recognition, so the coherence idea of truth tends to deny any higher knowledge than is possible to the consciousness. Whether the final appeal be to the logical only or to a dualism of the logical and alogical is a matter of dispute among the idealists.

But according to the view here propounded Philosophy, to succeed, to be true, must satisfy all the conceivable requirements of the intellect; its solution must not offend, but must correlate all other truths, whether intuitive or derivative, necessary or contingent, and include them in a universal transcendent relation. If but one element of Knowledge project out of the system and refuse assimilation, so that it is not entirely explicable in terms of the others, the philosophy is certainly incomplete and may be untrue, for the truth of a philosophy is its own perfect consistency.

Why no such complete philosophy has ever been written, or perhaps ever will be written, if not already self-evident, may become so hereafter; meanwhile, in the attempt to attain metaphysical validity, the fundaments of knowledge may be laid bare and the boundaries of comprehension may be defined, for in the much-quoted words of Kant, the final reward of philosophy may be, "instead of discovery of truth, the modest merit of preventing error."

CONCLUSION:

The analysis of statement which has been undertaken in this and the three preceding chapters has disclosed to us the methods which are open to a philosopher.

All philosophy must proceed by verbal assertion, and, being verbal, is confined in its scope by the limitation of the words of which assertion is composed and by the character of the combinations into which such words can be grouped.

We saw, for example, how the use of words assumed discrete sensations; how the noun asserted

these potentially and the verb described them in action, and, further, how all general attribution in adverb and adjective assumed a Knowledge of Truth based upon these initial assumptions.

Next in statement, the Formal, which related the conceptions into which sense data were unified in necessary truth, was distinguished from the contingent predictive, where truth became a matter of Event in Time and Space, and, finally, we ascribed to metaphysical statement the function of yielding intellectual satisfaction to the demand for a comprehensive completeness in the description of Being.

We see, therefore, that metaphysical truth must be both contingent and necessary: contingent in that it must account for and include all sensual Event, necessary in that it must include all truth in which such events can be intellectually presented. Metaphysical truth must thus endeavour to explain both form and matter, both substance and attribute, both Knower and Known in one mutual consistency; that is, it must predicate the Known in terms of Being beyond Knowledge.

One aspect of this task, which has not yet een touched upon, may be suggested here. It is ot enough that metaphysic should present the explanation to the philosopher himself; to be worthy of the name of system, other persons, of a mentality which has reached the philosophic plane, must be able to understand the metaphysic and appraise it. This requirement puts a further burden upon the philosopher, not only to choose his words and statements so that they do not offend their own necessary or contingent nature, but also so to select them that they may conjure up in other thinkers the required ideas. Philo-

sophy is thus both a science and an art: a science in so far as it is idea discovered in the mentality of the philosopher, an art in so far as such idea is presented to others.

Now, all new assertion, presented to another, must be grafted on the current of that other's thought, and, according to the tendency of that thought and the character of the junction with the new idea, the philosophy will be variously presented to different recipients.

We have seen how the creation of each new intellectual theory presupposes a prior alogical correlation; so, also, in the reception of such an idea, the quality of the reception will largely be an alogical process, depending upon the whole predisposition of the receiver, not only conceptually, but also subliminally, according to the personality of the recipient.

It is in this connection that the emotional aspect of philosophy becomes so important and so dangerous. Æsthetic and moral preference tends to perturb the judgment at every turn. Those who have studied the great Greek and German philosophers know the difference in receptivity between the statements of the former, expressed in beautiful modulated language which fits the thought as chain-mail the warrior, and the no less important truths of the Germans, enunciated, for the most part, in harsh, forbidding jargon; and who is there who is not influenced in his judgment by the æsthetic appeal of the inadequate conclusions of M. Bergson?

As in the æsthetic so in the ethical domain we discover the superior appeal which those philosophers have who know how to touch the religious sentiment. As James has said, those philosophies

which emphasize the spiritual are "pure, noble, and elevated"; those which lay greater stress on matter are "gross, crass, coarse, and muddy," and the former are readily preferred, not for their truth, but for the emotional satisfaction which they afford.

To such an extent is this ethical perturbation carried that we have actually the example of Herbert Spencer not explaining that his material doctrine is true, but apologizing to the religious sentiment on the ground that Science, by refining matter, has ceased to make it crass.

A useful metaphysic must therefore establish a preliminary agreement between author and recipient as to the means to be employed and the method of their employment and must discount all irrational emotional sources of confusion. The attempt to indicate some of the more obvious causes of emotional disturbance and the endeavour to arrive at some agreement between author and reader as to the appropriate method of metaphysic are the apology for the first part of the present work.

PART II

DATA

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DATA

INTRODUCTORY :

The search for the metaphysical explanation of Being must assume at the outset Experience as the subject of predication, for it is the Knowledge of sense data which we possess which alone can give a something to be described.

It follows from this that the sufficiency and scope of explanation must bear a close relation to the extent of Knowledge, and that the greater the content of conscious experience, the more considerable are the data which call for explanation. Now Knowledge considered as the subject of metaphysical statement may be of Things or of Truths ; it may either be direct alogical experience of sense data awaiting contingent correlation, or it may be subsequent mental experience of that correlation acquired by intellection from the primary sense data. Knowledge may thus at the outset be divided into two distinct classes : Things, the subject of acquaintance, the immediate sense data ; and Truths, whereby Things may become the subjects of description.

Things, again, may be known in two ways : first by direct acquaintance and secondly by description ; and, though the former is the more immediate, the latter alone can be directly understood, for, in order to know a sensation, that is, to give it its proper attribution and significance, it is neces-

sary to name and conceptualize it, and in this process Truth enters, and the original immediacy of the sense data is necessarily lost.

In intuitive correlation and in empirical judgment we have noticed an intermediate stage of correlation in which sensations are subconsciously correlated, yet not entirely conceptualized; and in the existence of empirical judgment a transitional stage occurs which goes to disprove the assertions of the pallogical philosopher who would place all conscious existence within the formal.

The difficulties of appreciating the alogical sense data caused by conceptualization are, however, very great. To understand sensation we have to consider the consciousness of the animal or savage, whose primitive receptivity is less troubled by idea and verbiage than our own, and, in order to avoid the influence of intellectualism, we must also examine our own reflexes and instincts.

The assertion that in Knowledge each impression is unique, each idea general, is, as we have seen, not wholly true. Sensation demands a conscious organism for its reception, and this organism, by its very nature, has certain limited channels of communication through which the external alone can become a conscious sensation. This curtailment of the full possibility of the external reduces the possibilities of sensation to defined orders, such as sight, hearing, smell, etc.

Thus all sense data, so far from being completely unique, have much in common with other members of that very limited number of classes into which the psychology of the recipient forces them, and there are therefore certain fundamental common qualities of sense data themselves, irrespective altogether of intellectual attribution. A confused

recognition of this fact is to be found in Locke in his insistence upon the primary qualities which he considered to inhere in Things as distinguished from the more secondary qualities with which the intellect invests them. His distinction is fallacious in the form in which he presents it. The primary, no less than the secondary qualities, need a recipient for their being, and are in no sense wholly within the external; but it is a fact, which he appears to see dimly, that there are certain fundamental differentia of sense data which are the product of the innate constitution of the recipient and not of his intellectual attribution.

All sense knowledge is presented to us in one of the six forms of sight, smelling, hearing, touching, tasting, and muscular extension; within these groups the particular combination of data may be unique, but the community of class robs them of that individuality which might, conceivably, exist in any noumenal from which they may be assumed to proceed. The reception of sense data of any of these six classes, devoid of all attribution or intellectual correlation, may be taken at the outset to be purely alogical, and an examination of the causes of the promulgation of such sense data may well furnish us with a starting-point for our enquiry.

Psychologically, the sense data within the orders of touch and extension produce the feeling of the spatial texture of the physical universe, and so arise those notions of freedom and restriction of movement which in their turn produce ideas of a physical world, composed of varying aggregations of impediments to motion (matter) and absence of impediment (space). In a similar manner, from the other of the orders of sense

data a notion of the physical universe is gradually built up.

CONTINGENT ASPECT OF SENSE DATA:

The investigations of science into the ultimate nature of the external have made the most extraordinary progress within recent years, and have advanced to such a point that the material world is within measure of contingent comprehension.

We said, when discussing sensual statement, that the scientific method was limited to the contingent; but it would be ungenerous in the philosopher not to admit the immense knowledge which the scientist has placed at his disposal—knowledge which no metaphysician can ignore, knowledge which is of invaluable assistance to him in the consideration of sense data. It is neither practicable nor necessary to enter into the marvellous painstaking labours which the scientists have employed to explain the physical universe. The results, expressed in theories which receive more or less general assent, are sufficient for our purpose. Something, however, may be said as to the methods employed by physicists in their analysis of the physical world. It must be observed that the scientist, like the ordinary man, has proceeded first by description of perceived phenomena, next by hypotheses as to the causes of those phenomena, and next by verification of such hypotheses, which, at such a stage, assume the dignity of theories.

In early days, until the period of the early Greeks, the assignment of supernatural agencies as the cause of observed phenomena was not followed by any close experimental verification of the hypothesis. Thus the assertions of Animism were,

from the physical standpoint, unprovable and unproductive, whereas the crudest generalizations of the Ionian philosophers that the world was made of water, fire, etc., did depend upon observation and were crudely proved by experience, at any rate to the satisfaction of the philosophers propounding the idea.

This observation of the familiar was immensely extended in scope by the use of scientific instruments.

With the telescope and microscope, the limits of visibility both into the macrocosm and microcosm greatly widened, and, with the wider experience of sense data, wider generalizations became necessary to explain and to co-ordinate them.

In the macrocosmic search, these observations and the theories dependent upon them have finally found expression in the generalizations of Astronomy, which present to us the idea of physical bodies other than the earth, constituted of similar materials in various states of physical condition, moving in ascertainable orbits in an etheric medium. Not only this spatial notion, but also the temporal history of these bodies, what they were and what they will be, has also become the subject of scientific assertion, while, as regards the microcosmic, a resolution has been made of the discrete bodies of the observed world.

The behaviour of the directly observed, the gas, the liquid, and the solid, has produced the science of chemistry, which, passing through the descriptive and theoretical stage, has become a practical science—a science, that is, where the theoretic generalization can be used deductively to produce observed results in the formation of new material.

Thus Science has transcended the limits of immediate possible sensation and presented us with the description of Things which are not the direct subject of acquaintance. Thus has arisen the conception of molecules, which, though material—that is, possessing constant and spatially locatable properties—are at least thirty times as small as the filmiest matter optically perceivable.

Since the molecule, as such, cannot be perceived, it belongs, in a sense, to the descriptive conceptual order of knowledge, and from one standpoint may, indeed, be said not to be sense data at all. Nevertheless, it is distinguishable from those concepts which are themselves generalizations of attributes only; that is, the molecule is a pure noun and not an adjectival one, and, if science is to be believed, it is possessed of very definite and ascertainable properties.

The distinction between the molecule and the directly perceived world is this, that the molecule, and any lesser unperceived order, is only known by its results.

To the individual, however, most things which he would readily assert to have existence are also unperceived and only the subject of description; distant countries which he has not visited—indeed, even those places which he has now left, but in whose continuity of existence he still believes—are also not directly the objects of sensation.

All these also are known solely by the cumulative effect of their results; a relative returns from India, tanned, with a native ayah, in possession of rupees; all these facts fortify the belief in the existence of India, yet India remains to the stay-at-home Englishman an unperceived idea.

A distinction might perhaps be drawn by stating that matter above the molecular stage, though unperceived by the individual, is at least perceivable, whereas the molecule is not.

But even this distinction fails us, for the microscope has revealed to our vision matter previously unperceivable, and so we are brought to see that the real distinction must always be between Knowledge of Things, whether derived from acquaintance or description, and Knowledge of Truths; whether the particular necessary sense datum is or is not the direct subject of acquaintance is relatively unimportant to our purpose.

THE UNPERCEIVED:

There are four orders of Thing, the subject of description—the molecular, the atomic, the sub-atomic and the etheric—which are incapable of direct sensational recognition, and which are therefore known only by reason of their properties.

Such things may, therefore, in one sense, be regarded as theories to explain the operation of the perceived, but confusion will arise if a perceptual theory which suggests the existence of a Thing, though an unperceivable one, be confounded with a conceptual scientific theory of Truth such as is illustrated, for example, by the laws of Newton and Kepler.

The position of the unperceived in Knowledge is a difficult one. On the one hand it is not and cannot be the direct object of sensation; on the other hand, it differs from those concepts which are based upon individual sense data in that no percept of the individual thing exists from which to generalize the idea of it. Thus, the unperceived, though in a sense Idea, falls within the

sensational factual, rather than the logical formal order. By its properties it may be known, and in this it resembles all other factual elements of Event, differing only in that properties are vested in it by reason and not by empirical correlation.

THE MOLECULE:

The limits of the directly perceivable are at present reached in a film thirty molecules thick, and the molecule itself thus remains within the region of the unperceived.

But, as a matter of result, whether matter be solid, liquid, or gaseous depends on the organization of the molecules; in the solid state they are conceived to spin round like a top, or to oscillate backwards and forwards like a pendulum. As the body gets hotter, the molecules move faster and the swing of the pendulum increases. Parting thus from one another, the centrifugal tendency which keeps the molecules in position weakens and finally becomes incompetent to resist the centrifugal action, so that the body, which is composed of the molecules, becomes deliquescent and presents the appearance of melting.

Some molecules, however, having velocity greater than the others, may escape from the system altogether, in evaporation. In the gaseous state, all the molecules have acquired sufficient speed to escape from their neighbours, and so, if not confined, the organism will dissipate altogether.

Thus we see how the physical properties of any Thing at any time must depend upon the organization of the molecules composing it, and that, as this organization becomes more complete,

the resistance of the Thing to external environment, its continuity, becomes more complete also.

The existence and continuity of any material Thing, any perceivable sense data, which verbally renders it nameable, depends upon the persistence of the organization of the molecules composing it; if these dissipate or radically change, the Thing either ceases to exist or becomes something different from what it was.

The grammatical statement, therefore, in which we assert in the predicate that the subject noun will become something other than what it was in the event, has its physical analogue.

Cause, as we have seen, is no explanation of Event, though it is the basis of description and prediction; it is more accurate to say that non-causal personality is the determining factor in activity. Molecules placed in certain positions relatively to other Things will behave in certain ways. This is their causal aspect. When these positions contribute to the continuity of the Thing in question, or to its expansion—that is, when the positions endure—the thing is said to be organized, and is itself an organon endowed with personality. When the positions of the component parts of the organon or the positions of externals produce tendencies to dissolution, that is to the cessation of endurance, the state is said to be one of disorganization. But in either case the reason for the persistence or dissolution of the organon cannot be ascribed to any cause. The change in property of an organon is causal, but the change cannot account causally for the existence of the organon itself.

Now it is clear that, in so far as an organon

becomes active, to that extent it changes, so that, in changing, it ceases to be itself, and, unless a further accretion of the property lost by change can be obtained from the outside, the organon will, in time, cease to be itself, and it is this capacity to retain identity in change, to balance the katabolic waste of change by anabolic accretion, which constitutes the persistent metabolic personality of the organon. What is most important to observe is that the personality of the organic molecule, unlike its effects, is non-causal. There is nothing in a collection of atoms forming a molecule which can give endurance to the molecule as such except the molecule's personality.

THE ATOM:

Though the molecule is not yet directly perceivable, there is nothing but the imperfection of instruments which makes the division of physical matter into molecules impossible. The molecule may thus be said to be the ultimate of physical matter, but the molecule is in its turn composed of constituent atoms which have a different behaviour, and to which different considerations apply.

We have had occasion to remark how, with increasing generality of attribute, the possibility of difference in the class of the predicted idea decreases, and this is seen to operate contingently in the notion of the molecule and atom. Thus, while the number of possible atomic combinations in the molecule is enormous, though, in theory, numerable, the number of classes of atom is well below one hundred.

The characteristics of atoms have been examined and much of their property is known. Their

capacity to combine and the proportions and manner in which they do so have been accurately ascertained. Certain atoms, possessing affinity for one another, will readily form a molecular organon, while others in no wise can be persuaded to combine.

These personal capacities, exemplified in their relative weights, are persistent properties in the atom, and, broadly speaking, according to these weights, every eighth in the series approximates in general character. These groups of eight agree in their "valency," that is, in each group the number of atoms to be found in combination in molecules is constant, and in other ways, such as density, melting-point, boiling-point, etc., the groups bear a family resemblance to each other.

Here, then, we have a genus of which the elements are species, in which the genus itself has the common attribute of recurring with every eighth element, considered in terms of atomic weight.

This so-called periodic "law" is at present little more than descriptive, and the reason for it so far baffles explanation.

It will be observed that the atom, save in its brief period of nascent freedom in new combination, is conceived as bound in the molecule of which it forms an essential part; that is, while it is compounded in the molecule, it possesses no properties other than those with which it endows the molecule by its presence, or those which it possesses by reason of internal changes in its structure. Nevertheless, in so far as its sub-atoms cohere in it we must recognize in the atom, as in all organa, a spontaneous non-causal personality.

THE SUB-ATOM:

As the weight of the atom increases, so does its tendency to become unstable. Thus, the heaviest atoms develop a faculty of spontaneous disruption, while the most stable and constant, which are those of low weight, preserve their identity even under conditions of such great heat as is to be found in the Sun and in the stars.

The emanations of the unstable atom can be observed not only in the radio-active elements, but also in the more artificial condition of the electric vacuum tube. The emanations are of three types, two of which consist of minute particles. The alpha particle, which is large, possessing twice the mass of an atom of Hydrogen, when it impinges on solid matter loses the positive electric qualities which it possesses and becomes Helium, the lightest of the inert gases.

The beta particle is but 1/1,000 of a Hydrogen atom in mass, and it is the motion of millions of such particles which causes an electric current. They are the bearers of negative electricity, if indeed they do not really constitute electricity itself, and are therefore called electrons. In these electrons we reach the limit of discrete mass; their speed is one-fifteenth to one-twentieth of that of light, and they are thus separable from the Ether, in which they have their being, and move at a rate far slower than the etheric light-conveying vibrations.

The increasing generality which reduces the varieties of atoms to well under a hundred has brought all sub-atoms within one category; that is, all sub-atoms, no matter from what atom they emanate, possess identical properties, travel at

the same speed, have the same mass, and produce the same electrical phenomena.

With the sub-atom we are not far removed from that basic Substance which is the goal of our philosophic quest in this direction.

ETHER :

Though the sub-atoms are identical in their properties, yet they occupy localities in space; that is, in some places they are and in others are not, and they are therefore to be considered as essentially distinct matter.

The sub-atom itself is to be considered as dwelling and moving in a uniform homogeneous fluid, known as Ether, which penetrates the physical universe and out of which all matter is composed. We may conceive this universal Ether as having but two properties : the property of vibration and the property of being spun into matter. It is the vibration of Ether which conveys light, electricity, and actinic rays at definite speeds in waves or pulses, and these waves are themselves set up by the revolutions of the sub-atoms. " The essential distinction between matter and Ether," says Sir Oliver Lodge, " is that matter moves while Ether is strained, that is, it has the property of exerting stress or recoil." All potential energy rests in Ether, which, though it may vibrate, is itself stationary.

There appears, indeed, to be but one form of Ether in motion, a form in which, like any rotated fluid, it presents the appearance of those resistant qualities which we recognize as matter. Even in the case of Ether, however, while its effects are causal and measurable in science, the Why of its existence is volitional and lies outside causal explanation.

THE CELLULAR:

So far we have omitted that peculiarly purposive group of organa, the vital. The organisms, with which purposive Will is more or less associated, are composed physically of a comparatively few species of element.

Just as the atom and the molecule preserve their organism in environment, and so have personality, which manifests itself in Duration and Locality, so certain carbon groups enter into and out of vital physical beings, but preserve their own identity and union. Such super-molecular groups are known as organic radicals.

Unlike the less complex organisms, the Colloid, the vital radical, needs not only a stable environment, but a peculiar peptonized one, which, in the form of nutriment, enables it to satisfy its own internal members and prevent disruption. In this necessity for pabulum may be found one of the distinctive properties of the vital, which is built up of the colloids, by which we can distinguish the living condition from the molecular, which demands only a stable and not a prepared environment.

Once the precarious existence of the Colloid is guaranteed, it is observed to have its interplay with its fellows, and to possess affinities and repulsions like other organisms. This interplay, however, is, from the very complexity of the case, far more difficult of ascertainment than that which is to be observed in the atomic or simple molecular systems. Before Life established itself on earth, it is probable that the Colloid began to appear on the face of the waters. The metabolic capacity of these aggregations preserved continuity in

their environment: from this achievement to the micro-organism, the cell, is but a short step.

The Cell is the least unit of matter in which the spontaneous exceeds the causal to such an extent that it may be called vital—which can achieve metabolic equilibration for an appreciable time. As a structure it holds within its meshes varied colloids and other elemental bodies of great complexity; the cell is observed to differentiate into two parts, a smaller and inner nucleus and a large outer part, and it is the addition of this nucleus which directs its purpose, its growth, movement, secretion, and reproduction.

Here then, for the first time, we observe within the organism itself a continuing differentiation, a directing and a directed part, and a personality inspired by a will which more and more tends to escape from the causal.

We know that Colloids have the capacity to absorb matter, to work it up into protoplasm, and so to grow. A unicellular organism, such as the amœboid, for example, takes in energy as food in nutrition, organizes it into living matter in digestion and assimilation, and expends a part of it again in contraction and locomotion; but the absence of all further differentiation in this, the simplest unicellular organism, is remarkable. The amœboid cell has neither digestive glands, lungs, nor other organs, and consequently the building up and destructive katabolic processes which go on are of extreme chemical complexity, for there is but one protoplasmic unit of mass in which the metabolic regulating operations may take place, and the degree of adaptability to environment exhibited by the unicellular organisms is therefore slight.

Nevertheless, growth does occur under favourable conditions, and the cell becomes, in some cases, very large. But with an increase in the mass of a cell, possessing but a small capacity for adaptation, the difficulties of obtaining a sufficient supply of further food increase rapidly; until, as a rule, the cell at length divides into two parts, thereby increasing its capacity for absorbing food by increasing the cubic area of its surface. In this way, each cell through surfeit reproduces itself.

A further stage in the purposive development of the cell is reached in the clustering of several cells in the "Moreads," which are a colony of social simple unicellular organisms. The oldest simple cells, such as the amœba, undoubtedly led solitary lives, as do some of their descendants, the unsocial amœba, to this day; but gradually, owing to the metabolic advantage which would be obtained by collective organization in contending with hostile environment, small communities of social amœba arose alongside of the individual solitary cells. As the colony grows increasingly complicated and numerous, a still greater amount of differentiation sets in; some individuals, those nearest the centre, become starved, while those at the surface become overfed, so that the former wax increasingly nutritive and reproductive, the latter becoming the more sensitive. A yet further differentiation of the later permanent Moreads is found in the Blastæads. The necessity of obtaining large feeding surfaces for the increasing colony results in the formation of a hollow ball, the wall of which is composed of a single layer of cells.

Once embarked, however, upon a social meta-

bolism, the difficulties of adequate nourishment of an increasing number of individuals become increasingly great, and specialization of parts proceeds with increasing speed. In the Gastrula the next stage in differentiation, a cavity, or gut, appears at one end of the hollow vesicle, thus permitting an unrestricted freedom of access of food to the internal part of the organism. Next, the cells of the gastræa, through continued differentiation, begin themselves to diverge in shape; the inner well-fed cell-wall increases, and thus bags out from the outer one, and is eventually forced by pressure of growth into two loose folds, the portions nearest the mouth of the gastrula still adhering to the outer cell-wall. These folds double back upon one another, through the continued increase in number and size of the inner anabolic cells, and so form a third central layer of cells, back to back, "the mesoderm."

It is not necessary to follow with any degree of detail the ensuing differentiation of organism. In the amphioxus the double folding or "cœlomation" results in the formation of a "chorda" or central vertebra between the two central layers; a formation which immensely adds to the facilities of locomotion possessed by the organism. This chorda or axial rod is the first foundation of a solid skeleton, its cells having by this time become widely different from the outer skin or inner nutritive cells. Up to this stage the causal external is still presented to the personality in sensations of touch alone.

We come now to the Platodes, or worms, which possess a specific metabolic organ of equilibration. This is a development of immense importance in

that it is the first localized psychic organ of Will that presents itself in organic evolution. We may say that the organ of equilibration in the platodaria is the basis of all these localized volitional organs, which culminate in the human brain. In the Turbellaria, a more specialized order of worm, this organ of equilibration has spread into a definite nervous system of cerebral ganglia, which culminates in the central equilibrating ganglion or brain. Moreover, many of the later turbellaria have also special sense-organs—a couple of small pits which are rudimentary eyes, and less frequently, auditory organs.

We have now come to a stage when evolution proceeds with ever-increasing speed and complexity and personality becomes more manifest; and it is only possible here to follow such developments as result in the human being, and so immediately serve our philosophical purpose. In the turbellaria there is but one opening of the digestive gut, which is still used both for assimilation and expulsion. Kidneys, whose function it is to remove unusable products of the body, and excretory organs subsequently arise, and all these are transmitted, along with other differentiations, from the turbellaria to higher organisms.

At this stage we find the fish, the Gnathostoma. Sight appears as well as touch in sense data. We notice in them, together with the appearance of the specific jaw, a double nose and floating bladder or lungs, formed from a fold in the fore-gut and used for the purpose of rising or sinking in the water. Two pairs of limbs are seen to diverge from the central chorda.

We come to the Amphibia, of which the modern frog and toad are modified specimens. In aban-

doning the water as an environment, their limbs necessarily undergo a considerable differentiation, which allows them to move on dry land. There is little doubt that the fish's fin and the five-toed web or foot of the later vertebrates are directly modified from the original chorda, itself a modification, as we have seen, of the folded gastrula inner wall. With them develops the sense datum of muscular extension.

MAMMALIA:

In the earlier Amniotes, e.g. in the Lizard, the gills entirely disappear. The heart divides into chambers, and the brain becomes complex. The full complement of sense data, such as can be presented to man, is more or less present.

It remains to mention the Placentals. They are distinguished from the marsupials by possessing in particular a far greater development of brain. The bridge between the two hemispheres of the brain, which originated in the two-brained platoda, and which is very rudimentary in the marsupials, becomes complex; the pouch in which the marsupials carry their young disappears, and the pelvis and jaw-bones undergo various changes. We must also note the advent of the uterine placenta, which gives its name to this family.

A further differentiation of the placenta divides the species into two groups, the indeciduates, e.g. horses, pigs, ruminants, etc., and the deciduates, which possess a more concentrated placenta, represented by the insectivora (ant-eaters, etc.), by Apes and by Man.

But in the earlier tertiary period the differences between the deciduate apes and the lemur are not noticeable; and even to-day the structure

of the deciduates is by no means constant among the various deciduate families but represents every stage of transition. As regards the deciduate true apes (Simia), we may note that it is from the group of Eastern apes that man arises. All the Eastern apes agree with man in the features which distinguish the Simian groups, especially in dentition, and both differ from the Western American ones in lacking an additional premolar in each half of the jaw. Moreover, the Eastern apes have also the same kind of nose as man; in some of them the nose protrudes as much, and has the same characteristic structure.

For these and other reasons, we are justified in reducing the immediate family from which man is descended to the catarrhines or Eastern apes; and we may say that man phylogenetically originated from these representatives of the present higher catarrhines (the tail-less anthropoid apes), which are found fossilized in the late tertiary period.

The discovery, in 1892, of the Pithecanthropus erectus, the skull of a fossil ape-man, in the latest pliocene tertiary deposits has supplied the last link (the "missing" one) in the phylogenetic stem-history of man.

The last stage of marked physical evolution is probably reached in the earlier quaternary period with the appearance of the true speaking man, from the Alalus, the primitive speechless one, and with physical man the study of the history of the alogical can be concluded.

CONCLUSION:

Much, if not all, of what has been stated in this present chapter will be familiar to those who

have studied the scientific aspects of the constitution of matter, but such repetition is unavoidable unless we are prepared to ignore the metaphysical significance of these researches.

Briefly, the work of the scientist has made it possible for us to realize the constitution of the material world, and, though much remains unknown and unexplainable, much has been learned regarding the nature of those sense data and their fundaments which are the material of intellection and metaphysic.

Thanks to the physicists, we are now able to perceive the outline of the structure of the physical universe which is presented to our knowledge, and, in terms of contingency at least, to understand it. In the first place, we have presented to us as contingent protyle a spatially uniform Ether, universally present and possessed of two properties, those of vibration and spin. In so far as Ether has no Locality, being homogeneous, it may be conceivable in terms of time, through its continuity, but not in terms of space. In the spun portion, which is matter, both time and space are necessary for its consideration.

This difference of condition arises from the fact that some only of all Ether is spun into matter, so that, between the spun and unspun portions, space and the possibility of mensuration exist. Both spun and unspun have attributes which give to them nameable properties, both are active in the grammatical sense, of both Event may be predicted, but in the case of the spun the possibilities of the Event are vastly more various.

The attributes of pure Ether are very limited; rapidity of vibration and quality of wave and

length are its sole or almost its sole properties; but the organization of the Ether about a point immediately produces different individual sub-atoms, which, though alike in nature, have different positions in the universe and thus possess direct spatial qualities.

Thus, that which distinguishes matter from the ethereal is the spatial organization of the former, and, as we shall have occasion frequently to speak of organization, it is as well to consider what precisely is meant by that term. What constitutes an organism is that its personality is such that in time it preserves its identity in space, which identity manifests itself by constant and recognizable reactions on its environment.

Thus unspun Ether lacks spatial identity, but a sub-atom, so long as it exists, is recognizable in time as being other than that which it is not.

Now this identity and negation of its Other depends for its recognition upon its influence upon the surrounding media, that is, the sub-atom has a spontaneous character which manifests itself causally in that it behaves and will behave under defined conditions in a prescribed manner.

The question of this organization resolves itself into a question of locality, or concerted position. In every organism three factors are to be detected. First, a katabolism or tendency to merge into the negative medium and so dissipate; secondly, an anabolism or accretion from that medium; and thirdly, a metabolism or balance of receipt and expenditure whereby the organism continues its identity.

Thus by katabolism the vertical spin of the sub-atom will lapse into the pure Ether, by anabolism it will be absorbed into an atomic

system, while, if these two tendencies are balanced, the sub-atom will preserve its identity as such. In the atomic and the molecular states tendencies similar to those in the sub-atom may be observed: though in that case but one form of dissolution is possible, that of losing spin, in the atom the possibilities become more various, while in the molecule the potentiality is still more increased.

Now, each atom is composed of sub-atoms, each molecule of atoms, each cell of molecules, each vital body of cells, so that each organism, though it possesses physically no more than its component parts, by local personality is yet more than their aggregate, and in full persistent metabolism acquires powers which they, as a mere unorganized aggregate, would lack.

Thus the physical universe, though various from the volitional aspect, from the protylic one appears similar in essence; so similar that it is open to question whether the emotion for symmetry has not read into it a greater simplicity than actually exists.

Each organon, in so far as it is nameable from the observation of its properties, is causal and determinate, but, in so far as it is regarded as personality, it is volitional and spontaneous.

In every case the anabolism and katabolism which affect each organon can be regarded as links in a chain of ascertainable causes and effects; it is the metabolism, the will to persist and influence arising in each organism, which defies causal prediction and analysis.

We are faced, therefore, with this dilemma, that, while the Self and Will of each organon appear non-causal and spontaneous, the power

of that Will, whereby it can be known, is limited by the exigencies of causation, and it is the analysis of these causal effects which a study of data from the scientific contingent standpoint is alone able to effect.

As each new sense datum arises a further hiatus appears, figuring as consciousness, between the stimulus and the reaction. The spontaneous in personality increasingly encroaches upon the causal, which reaches its supreme expression in the volitional thought of man.

Finally, our historical contingent examination of Things, to which this chapter has been devoted, has revealed to us an unbroken process, a process of differentiation and increasing power, the meaning of which is no less significant than is, for our purpose, the protylic substance upon whose phases Things depend for their existence.

PART III

BEING

CHAPTER I

ON SUBSTANCE

INTRODUCTORY:

The contingent statements of the last chapter as to the constitution of the physical universe and its inhabitants have brought us to the metaphysical consideration of a Substance, the underlying protyle from which the various classes of organism, great or small, have been built up.

It will be remembered that in Ether we reached the limits of contingent explanation, for in that fluid we could still find sufficient properties, the property of vibration and the property of spin, to enable us to use nouns and verbs of event to describe it. It is true that Ether has to be treated as different from all other things in one respect, namely, that whereas all matter has been conceived as existing and persisting in a medium which is not itself—a negative, that is, in which such matter could manifest its properties by its results upon its medium—Ether, through its homogeneous nature, must be conceived as without its Other, as its own negative. Its properties can but react upon itself, and its sole claim to conceptual recognition is its continuity; this is what we meant when we said that Ether was conceivable in time but not in space, that it had Duration but not Locality.

It is obvious, however, that in metaphysical statement we cannot rest content with Ether as an ultimate. The notion of Ether strained and not strained in wave motion, spun and not spun in the formation of matter, immediately raises the necessity of a something, itself neither strained nor spun, which is capable of receiving those qualities.

We must call to mind what we said when we were discussing the nature of words in the first chapter, namely, that in Statement the subject must not only be conceived as capable of being converted into the object in the Event, but must also, *ab initio*, be regarded as lacking before the Event the differentia which would, if already operating, make it the object and so render the statement of the Event meaningless or, at most, repetitive.

Let us consider the mental process which occurs when we ask ourselves "What is Ether?" "Ether," we may say, "is a homogeneous substance which is capable of receiving, and is in constant receipt of, shear and spin, so as to produce the observable phenomena of the Universe." Ether thus has capacity, which continues in so far as the continuity of light or matter involves a continuity of shear and spin, but that capacity inevitably leads us to the mental acquiescence in a Substance to which that shear and spin may be presented.

It is not disguised that the difficulties of the conception are very great, for it may well be said that the capacity to receive impressions itself robs Substance of its pure homogeneity. On the other hand, without that capacity the word "Substance" would lack all connotation, for

if the known world of sense data be not based upon Substance, Substance loses its only meaning for us, and thus a refusal to admit a substantial basis for Ether raises difficulties even greater than its acceptance.

To say that Ether is in strain and not strain, and then to refuse to relate the That which is so strained with the That which is not strained, is to rob Ether of all ultimate meaning, for in such a case the strain becomes Event without noun ; the statement becomes a merely descriptive empirical one, and is deprived of all theoretical value. But since Ether has meaning, we are driven by a combination of contingency and necessity to a recognition of a Substance, and such a recognition is, as we have seen, the essence of metaphysical statement.

Substance is the ultimate of sense data ; it is, as we shall see, both contingent and necessary. It is clearly not within Knowledge, as both locality and continuity are absorbed in that which absorbs all Event, and thus Substance appears as a predicate of Being of that part of Knowledge which is receivable from sense data.

SUBSTANCE AS CONTINGENT :

The best expression of Substance, contingently considered, is to be found in the doctrine of the Conservation of Energy and Mass.

A species of scientific Animism has found in the idea of Force an ultimate of matter and motion, and, so long as this word is used in the sole sense of the product of matter and motion, no very great error can arise. Attributes, however, have been attached to Force, particularly by the Victorian Cosmic philosophers, of

an emotional nature, which have led to very considerable confusion.

Thus Spencer in his *First Principles* has spoken of Force as the " ultimate of ultimates." Deeper down than matter and motion he asserts " are the primordial experiences of Force."

If by Force is here meant matter in motion, so far from being deeper than those elements, it is superimposed upon them ; but if the word be used otherwise, it is difficult to see what is signified by the word save in an emotional sense. When the stone falls, it is supposed, in terms of scientific animism, to be pulled down by some force, but what is observable in fact is no such agent, but a mere positional change in the location of the stone. The capacity for gravitational change in the Event is one of the properties of stones, and this predicted capacity in process of verification only sense data of the material stone can reveal.

If, however, the animistic idea of force is pregnant with possibility of confusion, it is legitimate to speak of Energy when applied to Matter as expressing in its potential sense a predicted material change of position and as signifying kinetically that change occurring, for such an idea is based upon sense data and involves a dualism to be related of matter and energy, and so satisfies the requirements of necessary formal statement.

With this preliminary observation we can proceed to consider the notion of the Conservation of Energy, from which, as we have said, the contingent idea of Substance is derived. The doctrine of Conservation of Energy and Mass affirms that in the universe of sense data nothing appears or

disappears miraculously, that is, energy manifested now in one way, now in another, persists or remains unchanged in amount.

In the idea of Conservation of Energy or Mass the scientist and cosmic philosopher see a fundament which cannot be explained except by the phenomenal effects wrought by it ; its universality, therefore, does not transcend contingency.

It is assumed by them at the outset that the condition of universal homogeneity, which is Substance, is unstable, and that therefore, as the different parts of Substance are exposed to incident forces, differentiation must result.

This statement must assume some non-causal Will external to the homogeneous Substance, for the energy of homogeneous Substance cannot itself produce instability, since in homogeneity kinetic and potential energy must be one, and no differential stresses can arise. Out of nothing, nothing can come. If energy is the product of position, there can be none in Substance, for in Substance local position does not exist.

At the same time the notion that Energy and Matter form a constant in the Universe involves the recognition of the constancy of the Universe itself. An infinity of matter and infinity of energy cannot be reduced to any constant not itself infinite, that is to say, the recognition of limited and relative movements of position in the universe, added to the notion of the conservation of the consequences of those movements, must lead to an assertion as to the finity of the universe in which these constants have their sum.

Thus, treating Substance as limited though homogeneous, as science is driven to do, the notion of evolution as " an integration of matter

and concomitant dissipation of energy, during which the matter passes from an indefinite incoherent homogeneity to a definite coherent heterogeneity" is valid and contingently satisfactory, and explains in such contingent terms the increasing co-ordination which we observed in the last chapter.

SUBSTANCE AS A NECESSITY OF THOUGHT:

In order to qualify as a description of Being, however, Substance must not only be contingently adequate, but must also satisfy the necessities of thought in such a way that the idea of its absence is absurd.

We have already touched upon this matter when discussing formal statement. The necessity of the notion of the Conservation of Energy and Matter in Substance is readily perceivable if the observations made in our earlier discussions upon Method be borne in mind. There we saw how nouns had meaning in so far as the predictions they made were verified in the Event. Stones are defined as things having, *inter alia*, the essential quality of susceptibility to gravitation. If, therefore, a stone not only without ascertainable cause, but without cause at all—that is, by a miracle—fly upwards, to that extent it is proved in the Event no longer to be a stone at all, and to have been wrongly so named.

Consider next all the other properties of stones, and imagine by miracle all these being contradicted in the Event. The further the miraculous manifested itself, the less title would the object have to the name of stone, and it is clear that if similar causeless miracles affected other things all nomenclature would become vain.

Now, without words, statement and logical reason become impossible, so, therefore, by introducing the miraculous, that is, by denying causation, thought is destroyed, from which it appears that the idea of uniformity of cause is a necessity of thought.

But the logical necessity of Cause is no more and no less than the necessity of ascertainable energy. In Cause the constant of matter and motion is implied, and this constant of all motion is that Substance which we may therefore predicate as a necessity of thought. Substance is therefore both contingent and necessary, and is therefore a word of Being, and so, metaphysically, its use is justified.

Our investigation of that section of Knowledge which is alogical has thus brought us from a consideration of the various organa, stellar, molecular, or sub-atomic, which preserve their identity through a metabolism more or less perfect, to the notion of an etheric protyle, the object of stress and spin, and so to a Basic Substance upon which all the sense data of Knowledge must be founded.

Substance has all the qualities of a metaphysical idea; it is undefinable in relation to its own parts and is therefore not within knowledge in the contingent or necessary sense. Yet, since the recognition of the known sense data forces us to an assertion of its existence, it is, but is not known; that is, it is Being, and so, in the predication of our subject, Knowledge of sense data in the Being of Substance, we have achieved our first metaphysical statement.

SUBSTANCE AS NOUMENON:

The notion of Substance as an idea of Being beyond Knowledge raises exceedingly important philosophic considerations.

Since the time of Kant, at any rate, nearly all metaphysicians have been in agreement in making Reality co-terminous with possible Knowledge, and the recognizable existence of Things in Themselves, the external and self-sufficient promoters of sense data, has not only been denied, but, as a consequence of this denial, the whole subject has received the very scantiest attention.

It is clear that, as regards Things, possessors of property and attribute, such attributes require a knowing mind for their acquaintance and correlation. So that whether a Thing in itself exists or not, it is certainly unknowable save as an object of consciousness; but the question arises, Do these considerations apply to undifferentiated homogeneous Substance, itself independent of time and space and possessed of no definite attributes, or have we in Substance an idea beyond Knowledge which is both phenomenal and noumenal as well?

The phenomenal aspect of Substance is well shown by Spinoza. To him, the attributes of Substance are conceived as actually constituting Substance itself; that is, behind the known attributes and properties of things, there is no other Being. The attributes are themselves Being and not merely Form, and such attributes are used by him in a sense not dissimilar from that in which we speak of Knowledge, and are described by him in the attribute of Thought (the logical), and the alogical attribute of extension.

The more modern attitude which is assumed towards Spinoza's basic attribute of extension, what is here called Substance, is to say that it is unknowable. That this statement is a correct one is almost self-evident. Knowledge, as we have seen, consists of the alogical or conceptual correlation of sense data, and this correlation is only possible in the differentiated, where sensation and non-sensation, attribute and absence of attribute, the Thing and its Other, exist.

Substance, *ex hypothesi*, being the protyle of all sense data, has no Other, and so clearly lacks that connotation which Knowledge demands.

But while the recognition that Things, as known, are the creatures of sense data and form is unimpeachable, there has, for the most part, been some lack of critical examination into the significance of the idea of unknowableness. We have to recognize the existence both contingently and necessarily of ideas that are unknowable. Substance is one. The unknowable is not the same as the unknown; it is something which exists but is unexplainable, and the assertion of its existence arises not from emotional satisfaction, but from rational requirement.

To such a notion we have given the name of Being. Being is outside Knowledge, though Knowledge is an aspect of Being. As we have said, all true metaphysical statement consists in the predication of Being from Knowledge, and is thus recognized at the outset as something transcending all possible Knowledge.

We may, if we will, assume a radical alogical element in all sense data, but into sense data the sensational and logical aspects alike enter. In Knowledge all Things are indeed phenomenal.

In Ether, with the disappearance of Locality, we are upon the noumenal threshold; with Substance both time and space pass, the conceptual element vanishes and the unknowable Being emerges.

SUBSTANCE AS PHENOMENON:

If we are justified in regarding Pure Substance as noumenal, that is, as Being beyond knowledge, it is equally true that propertied Substance, Substance differentiated in organa, cannot be held to be other than phenomenal sense data.

Pure Substance is both unperceived and unperceivable, but with regard to Things which are directly perceived, or which, though unperceived, have sensational consequences which are perceivable, it is quite otherwise. From the standpoint of psychology, we have to regard the external world as obtruding upon the consciousness through the media of certain nervous conduits, optical, auditory, and the like, and as dependent upon neural discharges through those channels for its expression.

In other words, the effects of all Things, by which alone they are known, have meaning, and are nameable, depend upon their subjective influence on other organa. It is obvious, therefore, that our sensations of the table are not the noumenal table itself, and it is equally obvious that, for us, the table has no other radical significance than our consciousness of it.

Thus the whole of the differentiation and attributes which distinguish Pure Substance from its material conditioned phases is within Knowledge, nor is it possible to see how Substance,

apart from Knowledge, lacking locality, temporality, and attribution, could be anything but pure.

There is this further feature of all propertied Substance in phase to be considered, that, to be appreciated in thought, it must ever evolve an antithesis to itself. A feeling is conceptually recognized because at other times and places it is not, and it may even be asserted that the Hegelian negative is as essential in sensation as it is in idea. From this aspect the Universe may be conceived as consisting of an indefinite number of parts, each of which, save one, may at any time, by an act of consciousness, be made negative to the part in consciousness.

Out of Pure Substance, in which table and not table interpenetrate, my table arises over against a universe of not tables.

Thus the entry of differentiation into Substance reduces it to the condition of the phenomenal, for the relative condition of the Propertied involves that apperception and conceptual correlation which are alike the product of consciousness. Immanuel Kant, while asserting the phenomenal aspect of Things, yet speaks of an unknown Thing in Itself, and until very recently Russell appeared to follow him in this respect, basing his belief in the noumenal disparate on pragmatic considerations of its universality and utility. The assumption may be pragmatically justifiable — little injury is caused by presuming such disparate noumena; yet our attitude to the disparate should remain essentially ideal and not realist, because there is no metaphysical necessity which causes us to recognize the noumena of sensation as Being such as operates in Pure Substance.

In the latter case, since Substance cannot be known and yet is a necessary ingredient of Being, we are driven to an assertion in its noumena, but in the case of the disparate, it is otherwise; there we can obtain all possible certainty within Knowledge, and so are not driven to further predication.

This aspect leads us directly to another matter, namely, the requisite attitude which should be assumed towards Being beyond Knowledge and its assertion.

The method here employed is one of economy; it is asserted that all belief in Being beyond Knowledge which is not metaphysically unavoidable must be promoted by some emotional stimulus, some desire for belief, either ethical or æsthetic, and, since it is the purpose of the metaphysician to eliminate emotional perturbation to the best of his capacity, no statement which has not the justification of acquaintance, or of logical necessity springing from acquaintance, should be entertained without the closest scrutiny.

Accordingly, the noumenal assertion of Things in Themselves is discounted as offending that economy of which we have spoken, and, were it possible to eradicate Pure Substance in a similar manner from our consideration by bringing it completely within Knowledge, we should not hesitate to do so; but, as we have pointed out, by reason of its complete absence of attribution or property whereby it can be known, so desirable a consummation is not possible, and we are therefore driven to regard it as pure Being, the necessary and contingent predicate of knowable sense data.

CONCLUSION:

Our final conclusion upon this matter cannot be more clearly put than in using the analogy of God to explain Substance.

Disregarding the question as to whether the recognition of God is or is not rationally derivable from Substance, the assertion of the Being of God, predicated from known creation, is an assertion of a kind not dissimilar to the assertion of the Being of unknown Substance from known sense data. So far from such an idea of unknown Being being an unusual or eccentric doctrine, as some philosophers may assert, such a conviction is common to practically every theistic religion, and is one of the actions of mind more widespread than any other sentiment which transcends Experience.

The predication of Divine Being in the unknowable is in fact far more familiar to the normal mind than are the ratiocinations of scientific contingency; it is a world-wide mental operation almost co-extensive with humanity itself.

In this matter of the predication of Being of the Unknowable we find ourselves on the side of the vulgar.

The assertion of unknowableness is indeed in itself an assertion of the Being of the Unknown, and it is only economy of statement which makes us restrict it to that which is, *ab initio*, beyond Knowledge.

Finally, therefore, our examination of sense data has led us to a discovery of organa of varying persistence, some perceivable, some beyond the directly perceived, all of which are the subjects of acquaintance and conceptual attribution, and

are therefore the creatures of knowledge. Beyond and beneath such disparates, however, we are driven both contingently and necessarily to assert a Being of Substance, which, in so far as it is outside Knowledge, must be defined as the final metaphysical predicate of knowable sense data.

The assertion of the Being of Substance must not be allowed to acquit us of the burden of inquiry into the exact logical process whereby we have arrived at our conclusion, for the use of any novel phrase must be justified by its rational significance, and not by any emotional one, if its employment in philosophy is to be justified. We must always recollect that the word "Substance" is, after all, no more than a word, and the magnitude of its symbolism cannot eradicate the limitation of its verbal origin.

Thus, like any other word, Substance must be descriptive of Event; if Substance has meaning, it must raise in the mind an expectation of qualities. Substance, like any other word, must raise an expectation, and that expectation we have postulated to be uniformity; in other words, it may be said that the Event of Substance is its eventlessness. Yet, just as Substance as word postulates Event, so, for that very reason, it cannot postulate any event other than the uniform event which is its essence.

That is, if Substance postulates uniformity, it cannot without doing violence to its necessary meaning connote heterogeneity also. Grammatically the noun "Substance" is composed of but a single adjective. It is necessary, in order that any event other than uniformity be added to Substance, that some idea of something other

than Substance be related to it, and to such a necessary idea we shall give the name of Will.

Again, we have said of words in relation that they must be capable of logical interpenetration, so therefore a word of Being, such as Substance, can only be related in the first instance to another word of Being, and such we shall see Will to be.

CHAPTER II

ON WILL

INTRODUCTORY:

If the observation of sense data in their static aspects have driven us to the assumption of an unknowable Substance, the observation of such data performing their functions in the Event will no less surely lead us to the predication of that spontaneous dynamic element in Being which we have called Will.

Will, like Substance, to be a word of Being—that is, to be a true metaphysical assertion—must needs satisfy both contingent and necessary expectations. Explanation must prove inadequate without it, for otherwise, if the notion of Will be advanced as a mere emotional hypothesis, it will offend that canon of economy of assertion upon which metaphysical statement should be based; Will, like Substance, must be unavoidable if it is to prove metaphysically true.

It must be observed, at the outset, that sense data are only knowable in so far as they endure. We recognize, in the act of naming, that Things persist and have constant properties, and this quality of persistence or of performance of qualities, such as are represented by the verb in speech, constitutes something more than the notion of the Thing as noun in a static condition.

On the other hand, the reason for such endurance can find no causal solution.

Language therefore recognizes two possible conditions of Event in every Thing—a state of endurance and a state of active event. The intransitive verb may describe one condition, the active verb the other, but both are in Event and are something more than an instantaneous recognition of the Thing such as the noun presents. The reason for the endurance and the Event cannot be accounted for within Knowledge.

If, then, the noun of nouns be Substance, the verb of verbs is Will. The investigation of the data of consciousness brought us to a notion of Substance as Being; the idea of Will is no less involved in them. Indeed, in a sense, the recognition of Will is even more immediate than that of Substance. Each of us, as Knower, is conscious of his own Will, of desire, strife, and satisfaction, in a manner in which we can never be conscious of our own body; and if, as we must needs do, we assume a similar Will in others; and if, further, in as much as other people, regarded as Things, have arisen by unbroken process from the cell, molecule, atom, and ether, we assume a Will less purposive and conscious, it is true, but nevertheless a nidus, a non-causal dynamic, pervading all organism, our recognition of Will as an ingredient of Being becomes at least no less direct than our recognition of Substance. It is the characteristic of all Will that it is spontaneous and non-causal; arising through personality, it varies only in degree of purpose.

Each organon on investigation will prove to possess a spontaneous Will, an energy to persist and to develop no less clearly a material structure.

In every organism will be found causal matter and spontaneous energy interpenetrated; indeed, as we shall see hereafter, the existence of the one without the other is unthinkable.

WILL AS CONTINGENT:

The conservation of energy and mass shows from the scientific standpoint that energy—that is, Will—is a constant no less than Substance, a fact which is exemplified in the famous laws of Newton.

The study of Substance and sense data has presented to us the notion of two orders, the one of Being, necessarily and contingently existence, outside Knowledge; the other limited, the creature of attribute and the object of conscious acquaintance or description. These two notions have now to be amplified by an examination of the two operations of Will.

We have to observe at the outset that to the extent that Things are within Knowledge as sense data or idea, they are, in a sense, possessions of the Knower. This possession may be immediate, as in sense data, in direct knowledge of Things by acquaintance, or mediate, as in conceptual knowledge; but in either case, in so far as there is Knowledge, there is possession. By possession we mean that to the extent that Things fall within the consciousness of the Knower they become to a greater or less extent the possible objects of his Will. A table seen may be deliberately moved, a conceptual knowledge of tables may lead to the construction of mechanical devices for the moving of tables in general, but a table unperceived and unthought, as when we stumble against it, if moved at all, will be disturbed by accident—that

is, only with the non-purposive Will of the disturber. Thus the limit of the operation of Will upon Things is fixed by the Knowledge of them; each Thing may be regarded primarily as the possible object of Will; in the last resort, all Will can only exert itself immediately or mediately in Event, that is, in the disturbance or maintenance of Things and in reflection upon such disturbance or maintenance.

As has already been suggested, the study of Will may be approached most easily from introspection; commencing with the Self we are led, unless we embrace Solipsism, to assert a metabolism, or ordering of internal events, in others, and thereby we perceive, at least in the case of mankind, a local Will in the individual which manifests itself in its own continuity and desire for expansion. The lack of conscious introspection in animals caused by the incapacity to reason or to describe Things, an incapacity produced by the absence of language or other symbolism, does not prevent a Will to persist or a Will to satisfy needs in those creatures.

Similarly, the absence of distinctive cerebra in lower animal life, while carrying with it the definite disappearance of intellectual process and purpose, does not deprive the animal of spontaneous Will to live, and, despite the increasing simplicity of the organism caused by the want of a cranio-spinal axis and spinal cord, the Will nevertheless continues in being.

So, therefore, if our belief in the unbroken development of organa is correct, a non-causal Will to persist is to be discovered, if only in the form of inertia, in every concentric group, in cell, molecule, and atom, so that it properly

may be said that one characteristic of all organisms is Will.

Now, first because Will operates by Knowledge and control of conditioned Substance, and further inasmuch as all Substance is composed of organa possessed of Will, the universe of Things comes to present itself to us as a conjunction of Will and Substance, in which each organism, according to its power and purpose, that is, according to the amount of Will in the Substance, seeks to preserve itself in its own environment and seeks to overcome that part of Will which animates its competitors and to impose its share of Will upon them.

The more the substance of the organism is permeated by Will, the greater is the desire and power to understand, so as to subjugate, the lesser will penetrations of Substance of other local Selves, so as to serve the purpose of the master need; which power, indeed, is an increase of the spontaneous volitional over the causal determined sequence of Event.

If, for example, we consider the case of a man who strikes a match to light a fire, we perceive that a Will to persist, figuring as inertia, is to be found in the molecular structure of the match, but also recognize in the man who understands and possesses the match a master Will which the match cannot hope to control. Thus the conscious Will of the man results in the subjugation of the inertia Will of the match, which, in its turn, serving as an instrument which the man needs, kindles the inertia of the wood composing the fire and breaks down its cellular organism into a more elementary atomic or molecular condition. The Will of man is thus less causal, more

spontaneous, than the inertia Will of the molecular organon.

Man seeks to understand, he endeavours to bring all Substance within his Knowledge and so within his Will, but he is met with obstacles in his path—some physical, alogical, and immediate, produced by the limitation of his senses, some conceptual, logical, and mediate, caused by the limitations of his mind.

We are now in a better position to resume our enquiry into the nature of the conditioned. Pure Substance we have seen to be without condition, and we have been brought to recognize how that part of Will which animates the human Knower seeks to penetrate and possess it; is it too much to assert that Things and condition arise in the consciousness of man, just in so far as his Will fails alogically or logically to possess Things, that is, to make their causal necessity volitional and through them to possess Substance?

For example, we may take the case of muscular extension; it is good psychology to say that it is the resistance of the tree to external pressure which gives us the idea of its solidity; is it not equally true that it is optical resistance which gives us the tree as image, and so with all the senses? In other words, are we not driven to conclude that it is the resistance to possession by the Will of the Knower which gives to him, in the first instance, the conditions and attributes of the Things which compose his sense data?

An example of the increase of power of Will through conception is to be discovered in the case of the X-ray; by the use of the X-ray the alogical Knowledge of solids we possess is increased, that is, the resistance of such solids to

external possession is diminished, and, if similar devices could be applied to muscular sensation, the solidity of the table might likewise be destroyed to the touch. Other apparatus might extend in the same manner the possessive power of sense or smell.

What then is it which causes a number of men to perceive a similar object? We know that to each the table appears different, yet to all there is a table in common—sufficiently common, at any rate, for the word "table" to connote certain similar consequences in the Event to all. The answer is that the limitation of men's possession of the table is so approximately similar as to make their alogical knowledge produced by the resistance of the table to the human Will approximately the same.

With logical knowledge the power of penetration and possession in different men varies far more, but since the logical, as we shall see hereafter, is based upon the alogical, certain words in any case, such as table, have at least some common import to all mankind. Thus we see why Things have no existence in themselves. Things are screens opposing the Will of an organon, of a Self, of a Knower, to possess and penetrate Substance, and, in so far as all Things are themselves organa, of more or less developed Will; the screen presented to the Knower is in fact a competing Will, and, in so far as it remains a screen, a successful one.

The conclusion at which we arrive with regard to the nature of Things is this, that the cosmic Universe is an arena of contending Will and that Substance is the common instrument of the contention.

In so far as Will establishes itself in Substance

it achieves organization; in so far as it passes from organization to influence it acquires Knowledge. Such Knowledge may evidence itself as a direct influence of Substance in sense data, that is, in Things, or in that more indirect conceptual logical knowledge of Things by attribution of which we have still to speak, but in either case the Thing presents itself as the boundary of Knowledge, and is therefore a screen to the further penetration of the protyle.

May not this emphasis of Will as in Being account for the antinomy of noumenon and phenomenon which has perplexed so many philosophers? If so, we are now able to see how it is that Substance, itself unconditioned, may yet be presented to the consciousness, through baffled Will, as conditioned. Were the whole Being of Substance to be possessed by a supreme Will, such as that of God, it would lose its conditioned nature, for the limitation of Substance shown in Things in not in Substance but in us.

WILL AND THE LOGICAL:

So far we have spoken principally of that aspect of Will which enables organisms to persist alogically in an environment of competing organa; we have yet to consider Will in its logical aspect. As regards Will, in the logical, we know that the Will which enables organa to persist, in its simpler stages in Inertia, in its more complex in Purpose, has revealed itself in our study of the progressive development of Things in evolution.

Starting with the inertia of Ether, capable of slight volition, of but two qualities of stress and spin, we have seen how, in the latter case, the locality which has been achieved by rotation about

a point has endowed the Ether with a Will to persist in Space as well as in Time which, in opposition to other spun Ether, has given to each separate spun part an objectivity and influence against its neighbours.

In the Sub-atom, the Atom, and the Molecule, we have noted the growth of an increasing non-causal Will and hostility to disintegration ; in the Cell, the possibility of variation in resistance has first produced a definite recognition of purpose, and we have learned how increasing Will and integration have culminated in the human mind.

Between the sensational resistance to Will which figures subjectively as sense data and the Knower to whom they are presented, there has intervened, in greater or less degree, a logical knowledge of such resistance which awaits examination.

The genetic aspect of Knowledge has already been brought before our notice when the subject of statement was under consideration, and we are therefore able at once to pass to human knowledge in its full activity without those preliminary historic and scientific investigations which unavoidably delayed our examination of sense data and Pure Substance. We may observe at the outset that resisted Will in sense data is and can only be conceived in opposition to a Knower who realizes its existence, for, whatever sense data may be, they cannot be the entity to which, in sensation, they are presented.

Though sensation be limited in its possibility to the orders of sense, within that possibility, itself in each case a specific hindrance to Will, it figures as unique and peculiar; its complexes do not repeat themselves in identical manner, nor can we " call forth the year that once is past."

The Knower, on the other hand, is a stadium confronted by many unique screens. In the relation of the Knower and his sensations, the many are absorbed into the one.

It is the function of formal knowledge to reconcile the Knower and the experienced obstructing Known, and in this sense, since the logical is not the Knower, it may be regarded as a part of Knowledge alongside of the felt sense data, and as such it is here treated. Yet, at the same time, it is well to recognize that the logical occupies rather an intermediate position between the Knower and the Known, that is, the logical, along with the felt sense data, confronts the Knower as knowledge, though the described Known does not directly obstruct the Will as does Sensation.

It is suggestive to recall the historical development of the capacity of formal descriptive knowledge, and to enquire why and how the divorce between Knower and sensation first appeared, and what produced the necessity for the formal intermediary.

In the early stages of organa, nay, in Ether itself, we had occasion to call attention to that spontaneous Will in Substance which results in the continuity of the entity. In the earlier stages of organic life the organism causally reacts, more or less immediately, to its environment, but an increasing capacity for adaptation and purpose produces a hiatus between external stimulus and reaction whereby a range of possibility is presented to the animal.

As this range of possible volitional action is enlarged in the more intelligent, and life, consequently, becomes less mechanical, the possibility of survival in a changing environment and de-

velopment is increased; the conceptual faculty endows the organism with an understanding of the hostile significance of other Wills confronting the Knower in existing sense data and makes possible an anticipation of their results in the Event.

In the earliest stage of articulate symbolic representation of defined sense data, we find the interjection alone figuring as part of speech. The interjection resembles the animal cry in that it does not so much describe the experienced sense data, but rather figures as the emotion produced by it.

It is obvious that a cry, suggestive of emotion, is far less conceptual and is more directly associated with its stimulus than is the use of prescribed words. We know how, in purely physical reflexes, a given emotion produces physical effects —stimulation of the heart action, clenching of the fists, or what not; and how, among other effects, it calls forth the cry appropriate to the emotion.

This cry, by association, becomes connected by others with the emotion which produces it, and appears, at any rate in the higher animals, to be used more or less to convey to others the sense of the emotion.

Thus a puppy, on wishing to enter a room with a closed door, will whine by instinct; the adult dog may whine to tell people within the room that he wishes to enter. Moreover, side by side with the animal's purposive cry is to be found an empirical recognition in the animal mind of the existence of other persons, for without such a practical judgment as to the value of the cry, its use to influence others would scarcely be invoked.

It is interesting to note in passing that herein may lurk all the elements of error: the animal which reacts vocally to a stimulus can scarcely produce a false impression of its own state, but the animal employing his cry as language may choose an inappropriate sound and fail contingently to convey to the recipient his desired condition. Truth and error thus appear at the threshold of the conceptual word, and are the inevitable concomitants of statement.

The operations of the Reason, scientifically considered, are to be found discussed in Psychology. It is the function of Psychology contingently to study the growth of the process of the mind, both in the comparative and genetic sense, and for this purpose to relate the physiological knowledge of cerebration to its intellectual processes. From the psychological standpoint the origin of the mind may be traced to its ultimate sources, for even in the physical world the persistence of the organon of atom and molecule presents the fundament of the individual Will to live and the ensuing purposive Will from which all distinctive personal properties exfoliate.

We have traced the physiologic development of organisms, and for our purpose it is sufficient to say that we have to note a corresponding complexity of mental state which finds physical recognition in the appearance of a specific cerebral apparatus. The brain, isolated from the outer world and sensitive only to neural communications, is gradually seen to absorb within itself the spontaneous direction of all sensation and motion which is in the least degree purposive in the organism, and corresponding to this physical evolution, is to be found that growth of

psychological capacity which has been described in earlier chapters and touched upon in the introductory part of this one.

The purposive use of cries of animals has led to a recognition of others; passing to children, we note how this recognition of others is fortified by a further intellectual recognition of the Self. By this time the cry, at first a mere reflex effect, has detached itself from its stimulus, and, in the form of words, has become symbolic.

Whether words be the only method of thought or not, it is clear that it is only with some sort of symbol that conceptualization is possible. Now, all Knowledge, whether sensational or logical, we have seen must ultimately be presented to the Knower in familiar sensational form; that is, every thought, in the last resort, can only be appreciated as word, sight, feeling, or in the form of some other of the senses.

In the process of thinking the words appear before the reasoner within his own mind either as sight or sound. Though the word convey a universal idea such as "table," the actual word "table," as such, is subjectively presented to the Knower as a particular internal auditory or optical sensation.

The recognition of this fact much simplifies an understanding of the process of reasoning. In the flux of our consciousness we are only able in the first place to have a definite number of neural discharges at a particular time, which correspond to and necessitate a defined number of definite sensations.

Now, in thinking, it is desired to understand the qualities of Things—that is, to bring within one wide class the different properties of that

class as they are found in complex, varying, and unique combination in the sensational world. How is this to be done? We know that the mind can do no more than appreciate sensationally that which is either within or without itself. But Sensation involves particularity, and what is desired in Reason is a mental recognition of universals, so that, if we can satisfy the mind with a particular sound, which in fact symbolizes a universal, we shall both subjectively know the defined particular in acquaintance as sense and so know the general as description, and this is the function which words and language perform for us.

Language, therefore, is a device whereby, with internal neural, acoustic, or visual sensations of particular words, such as "tables" and "chairs," we can symbolize a general notion which we are unable sensationally to grasp.

Thus Reason, the product of language, the logical formal, figures as a mediator and interpreter of the unique unrelated Many to the individual Knower,, and its process of performing this function is by Symbolism, whereby a perceivable sense of sight and sound is deemed to be a general notion and so, by being both particular and general, acts as a reconciler of the many sense data to the single subject Knower. Contingently, therefore, we see that all Thought may be conceived as the complete volitional presentation to the Knower of his own internal sensations—sensations which, in the last analysis, appear to be the resuscitation of memories of sounds and sights actually physically perceived.

Thus memory and imagery are the indispensable fundaments of Thought, since without the power

of particular representation the symbolic generalization cannot operate.

It is probable that, in children and the less cultured, physical representation in images tends to exclude its symbolic properties, but the more general the conception the greater becomes the symbolic possibility and the slighter the representative physical datum. In Algebra, for example, the self-representative datum is limited, for the most part, to the sights and sounds of the alphabet and certain conventional symbols, while the generalizations are in inverse ratio to the paucity of the sensational representative fundaments.

For a considerable period the problem of how Knowledge is possible has occupied philosophers, and in the contingent explanation here outlined one solution has at least been attempted by showing that while we may not be able at this stage to define how Knowledge is possible, we can at least hazard a definition of what logical Knowledge is. The logical may be defined as the General sensationally represented in terms of the more unique.

The unique, however, in alogical knowledge by sense datum is resisted Will; it would appear, therefore, that in conceptual Knowledge the Knower deliberately confronts himself with an artificial subjective obstruction to his own Will, which obstruction he utilizes symbolically to realize a true objective hindrance.

It is for this reason that all logical thought proceeds by conception and involves a recognition of its own negative. The hindrance to Will produced by the word "table" is not, like the sensational table, an objective one; it is a purposive volitional self-created hindrance, and, as

a consequence of this, the Knower, at the very time when he creates for himself the limitation of a table, reaches beyond it and knows of its possible non-existence or negative in a way which is not possible where a table by acquaintance is presented.

We may therefore express the logical in terms of Will equally with the alogical. The logical is a marked purposive auto-obstruction of Will produced by the Knower himself which is utilized, symbolically; it differs from the alogical in that, throughout, it is not a comparatively irremediable causal obstruction such as sense data are, but is variable or removable according to the volition and intellectual capacity of the Knower.

WILL AS A NECESSITY OF THOUGHT:

The contingency of Will is thus established both in the logical and the alogical. The recognition of this fact is nowhere shown more clearly than in the doctrine of existence in Newton's Laws of Motion. We have spoken so far of Will which we have seen to exist with physical organa; we have yet to consider Will as Being co-existent with Pure Substance.

The contingency of Will in organa has already been demonstrated, and its necessity, which has been touched upon in the chapter on formal statement, is equally manifest.

If for the moment we turn our minds to the earlier chapters of the book, it will be remembered how, at the outset, it became evident that words had only meaning in so far as they described Event, and how statements involved a recognition of persistent subject and object and uniform causation.

Now, it is this very quality of persistence

and property in words which we have called Will. Will is the sum of the behaviour of Substance which makes statement and therefore Metaphysic possible. Thus at the outset, in considering verbs, we assumed Will in Event as a necessity of metaphysic, though at that stage we were not in a position to realize all the consequences of that necessary assumption which now present themselves.

In the earlier portion of this book, in the discussion of Method, we were able to see how every statement was mediately or immediately founded upon Event; we saw how the subject noun involved a continuance of property in that which it described and how the verb purported to show the transition of subject into object.

Now this transition, involved in prediction, assumed a change in the subject which infected the object with the transformed properties to the extent to which the subject was bereft of them. Thus, if all properties, potential and kinetic, are the result of Will operating in organa, we can perceive how the noun represents the Will to persist in the organon, and how the verb represents the Will in the Event.

This is what was meant when it was pointed out that the Noun was itself a descriptive and predictive statement. In the Noun the internal will to persist within the organon is alone described; the use of the Verb, in the subject noun, figuring as object in Event, necessarily involves the Will of the original potential noun, now become kinetic.

Thus Will is implied in every statement of Event, and as all statement is based upon Event, it may be said that Will is necessary in statement and so in thought.

Will is therefore both contingent and necessary ; that is, it must figure in metaphysical statement along with Substance as Being, as the predicate of Knowledge.

CONCLUSION :

At the risk of repetition it is proposed shortly to summarize the salient statements contained in this chapter.

We have assumed Substance to be itself unconditioned in the physical sense, to be the stadium upon which Will operates, but the continuity of existence involved in the Being of Substance is possessed by its parts, which, in greater or less degree, are organized—that is, possess that local Will to persist which gives them also an appearance of continuity.

This local persistence of spontaneous Will in Substance, manifesting itself in Ether as rigidity, in the physical and chemical worlds as inertia, finds more complete expression in the biological order, where the Will becomes purposive. In the animal kingdom the organism, in order to preserve its continued existence, seeks by acute sense and instinct, and in Man by symbolic understanding, to comprehend the Will of the organa with which it is surrounded and to make them subserve its own purpose. The passage is from the causal to the spontaneous.

It is the failure to overcome Will in other organa and to penetrate their Substance which produces Knowledge by acquaintance. A sunspot may present itself as a dark mass upon the surface of the sun, whereas, in fact, it is itself an incandescent mass, slightly less iridescent than the surrounding photosphere ; being relatively less

bright, it figures as a black mass, but it is the optical relation which gives the notion of solidity.

In just the same way all Things figure as solid or appear to possess other quality only relatively to other things, and this relation is determined by the Will of the viewed organon to resist the penetration of the viewer, and, in its turn, to impose its properties upon him.

Thus organa present themselves to each Knower as Things, but similarly, the first Knower imposes himself to another Knower as Thing within the latter's knowledge. Next we have seen Will to be both contingent and necessary—that is, to exist as Being external to Knowledge. Such Will as Being is the concomitant of Substance, and the degree of its penetration of substance determines Event.

If, finally, we direct a logical scrutiny to the idea of Will similar to that which we employed towards Substance, we perceive that whereas Substance is necessarily involved in the use of nouns, Will is the necessary fundament of all verbs, and, just as quantity in the individual Thing becomes merged in Substance, so all quality in the Event is absorbed in Will.

Yet, just as the conceptual idea of Substance demands Event and predication if the word "Substance" is to have meaning, so the word "Will" to have meaning also requires property. The event of Substance we have seen to be uniformity; we have yet to ask ourselves what is the event and property of Will.

If the essence of Substance be kinetic causal uniformity, the essence of Will is one spontaneous dynamic. In the competition of local Will, thwarted desire and achievement may enter, and, just as

Duration and Locality, which are merged in Substance, arise in local Thing, so in local Will the potential and the kinetic, need and satisfaction, are absorbed in the universal dynamic of Will as Being.

Thus Will is the substratum of Event as Substance is the basis of Thing. Because in Statement a Thing is thought of before Event is predicated of it, so there is a natural inclination in the mind to consider Substance as more protylic than Will. Will is imagined to come to Substance—God "moves on the face of the waters"—but if the priority of Substance and Will be considered, it will readily be seen that neither is prior to the other, but that each presupposes the other and has only meaning in so far as it is related to it.

Thus, as each Thing in its name involves an Event, and as each Event requires a Thing possessing an essence capable of such Event, so the Being of Thing involves the Being of Event, and Will, the essence of Event, requires Substance, the essence of Thing, for its expression.

It is the contact of these two radicals in organa which produces that stadium which figures subjectively as Self and Knower and objectively as Thing to other Selves and Knowers.

CHAPTER III

ON THE KNOWER

INTRODUCTORY:

We have now been brought to a conception of a universe of Substance penetrated by Will in which each individual conjunction figures as Thing in the resistance or consciousness of others. This objective external aspect must now be supplemented by an examination of Will and Thing from the standpoint of the individual Self. There is this property common to all Selves, whether simple or complex, that to each is presented an environmental not-self which is to the Self Sensation or Knowledge. Each Self, therefore, is dual in nature, for it figures not only as its essential Self, but also as that not-self or knowledge which the Ego absorbs within its own domain.

That the Ego is enriched and affected by the Knowledge which is its possession is evident, yet, at the same time, we must observe that the Knower ever transcends his Knowledge, and so is always to himself unknown and unknowable. Yet, while the Ego is unknowable, inasmuch as his content is conditioned by the Knowledge which he possesses, we must endeavour to obtain some insight, however indirect, into his nature.

A genetic examination of the relation of organism and its environment, in the various degrees of

development, supplemented by personal introspection, should yield such Knowledge as is possible in a subject of such extreme difficulty. We propose first to ask ourselves what is the nature of Self in those organa where the logical is absent, and then to proceed to the consideration of the logical and so to self-consciousness.

We shall attempt to pass under contingent review Ether, the Sub-atom, the atomic, molecular, cellular, and animal condition, noting in each case the operation of Will and Self, and with the material thus obtained we shall be in a better position to understand the introspective necessity of the Self, and so finally to attempt a metaphysical statement upon it.

We know that Substance in itself must be regarded as pure and unconditioned, if only for the reason that all organa are composed of the same protyle, so that there is no "Thing" in the substance of man which distinguishes him from the "Things" in the substance of Sub-atom or Ether of which he is compounded.

The sole distinction between one local substance and another consists in its volition and local persistence. Causally, the positional grouping of any particular individual is all that distinguishes it from any other local existence, or, in other words, the texture of Substance is homogeneous: it is the presence of non-causal Will, variously possessing and penetrating Substance which alone produces the appearance of heterogeneity and local Selves.

These Selves, which are the local conjunctions of Will penetrating Substance, may thus be conceived to be possessed of a limited energy produced by the Will as it is limited in their Substance,

which energy, in effort, becomes motion. The Self, that is, in Aristotle's phrase, is ἐνέργεια, and only in strife does it become κινησις.

Were the Self to achieve a perfect metabolism both in its environment and internal members, it would be distinguishable from mere apathy in that it would have achieved existence; its condition would be hedonic, a perfect equilibrium, and not merely passive.

Will as Being, therefore, possessing all Substance, would be energy without the notion of environmental strife and change. The ἐνέργεια ἀκινησις of Aristotle is the fittest expression of the idea of universal Will. Constancy (ἥρεμια) and not nothingness is its attribute.

ETHER:

One of the essentials of local selfhood in organa is spontaneous persistence and exercise of that influence upon other Selves in Substance which constitutes the local Self's environment. At the outset, in considering Ether, we are met with this difficulty, that Ether, as it is scientifically and contingently regarded, has no environment upon which to operate. Ether, being assumed to be all pervasive, is without Locality, and therefore does not offer a localized impediment to the Will of organa; it is not conceivable as a whole in terms of Space. In Time, however, by its continuity of existence, it offers obstacles to Will; moreover, it is possessed of properties of stress and spin which give it a relational recognition within Knowledge and distinguish it from Pure Substance.

Thus the persistent properties of Ether in vibration and spin give it a slight volitional self-existence; were it to lose its vibratory and

tortional attributes it would cease to be itself, so that in Time, though not in Space, the self-hood of Ether may be assumed. In Ether, therefore, we are but slightly removed from that beatific condition of motionless energy of which we have spoken. In Ether we find a link between Thing and Pure Substance which should prove invaluable to a comprehension of both. Ether is almost ἐνέργεια ἀκινησις, motionless energy, but just fails to achieve perfect equilibrium.

The disappearance of Locality in Ether is very important, for, if Locality be admittedly lost in Ether, is it impossible to conceive the absence of Duration in Pure Substance? In Ether there is Duration; its stresses and waves are more or less at different epochs. In the unknown Being of Substance we conceive Duration to cease through absence of condition.

Pure Substance differs from Ether by the absence of the condition of Duration, but Ether differs from the sub-atomic by lack of Locality. If, therefore, the effect of the absence of locality as between the Selves of the sub-atom and Ether be studied, some inference may be founded whereby the effect of the disappearance of Duration as between the Self of Ether and Pure Substance may be ascertained.

EVOLUTION:

In considering the evolution of the Sub-atom we first figure Ether as locally homogeneous, without spatial quality, but possessed of Duration. This Ether we then conceive in part in spin, and from the spun part emerges the Sub-atom.

It will be noted that at each genesis of an organism incoherent motion, the effort of spon-

taneous Will before its penetration of Substance, precedes the establishment of a metabolic constant. We have recognized the atom to be in nascent perturbation before molecular equilibrium emerges, and, similarly, we note the unorganized efforts of molecules and cells to precede their purposive organization, so that at each stage the perfect Self is achieved only after preliminary effort and incoherence. The Self of the sub-atom, which shows itself in the first place as capacity to retain and perpetuate the spin of its parts, as against the unspun etheric environment, soon proceeds, once metabolism exists, to produce wave disturbance in its medium ; so also, with other organs, the stage of metabolism, the establishment of Self, is a necessary precedent to the setting forth of distinctive non-causal qualities.

Each Self appears to act not only as if it were opposing the disturbing forces of other Selves, but also as if the protyle itself would render homogeneous its parts by effecting their disintegration ; thus the protyle appears to be negative, to unify and destroy the local selves of its parts, and, at all stages of integration, effort appears to be necessary to resist the disintegration necessitated by the uniformity of Pure Substance.

Thus we are forced to conceive Substance as in a sense hostile to spontaneous Will and to the continued local Self, but, since Substance is uniform, it does not appear to the consciousness as Thing within Knowledge having particular Locality or Duration, but rather as universal hindrance to individual effort and progress.

With the idea of the uniformity of Substance in our minds, we are able to see how it is that Substance is not and cannot be conceived subjectively in Time and Space.

Substance is uniform and negative; consequently it cannot figure as Thing, in that its opposition to the local self is coterminous with Being, and consequently Substance does not resist the local will more at one place than another. It therefore lacks that Duration and Locality which would cause it to figure to the consciousness as Thing.

In order to more fully appreciate the antagonism of Uniformity in Substance to Will and local Selves, we must remember that it is non-causal persistent movement in rhythm which gives to an organism its local Being. The conservation of energy, viewed from this standpoint, means no more than that the sum of the Will which produces organa by contact with Substance is together equivalent to the negative of Substance. Were the positive Will of organa to exceed the negative nature of Substance, conservation of energy would be destroyed by the accumulation of local Self exceeding that of Substance; were Substance to prove impenetrable to the positive efforts of local Selves, the universe would become homogeneous and without energy, and local Self would perish.

The local Self of the organism is thus seen to be a citadel which must withstand not only the anabolic pressure of other Selves but also Pure Substance, which ever operates to exact from local Being that autonomy which the local Self has won; the qualities which the local Self develops are no more than entrenchments wherewith Will may use the organism to resist the ever-present tendency to dissolution.

This, then, is what is meant by the phrase "possession and penetration of Substance" used in the last chapter; by possession, the Will in the Self has spontaneously achieved local dominion

over Substance, and, within its own compass, has frustrated the Uniformity of Substance and has achieved a metabolism whereby it lives.

We are thus brought to the conclusion that the Darwinian notion of competitive struggle requires restatement in that Darwin and his school, while emphasizing the inter-organic contest, overlooked the greatest disintegrant to local Being, namely, Substance itself.

Indeed, in the waging of the ceaseless strife, local organa are seen to compound their differences in the face of a common foe; co-operation takes the place of fratricidal contest, and in the affiliation of atoms in the molecule and molecules in the cell, a treaty of competing parts is effected by Will wherewith the more effectually to stave off dissolution.

At this stage of our enquiry it is scarcely necessary to trace minutely the peculiarities of the Self at each cycle of organization, or the devices for frustrating dissolution which come to be employed upon neighbour local Selves; out of the Will to persist develops the purposive Will, until finally in Reason we discover a supreme device for achieving the penetration and possession of Substance.

THE SUB-ATOM AS SELF:

Once the notion of local Self in contention with the uniformity of Substance is realized, the devices of its evolution become intelligible.

Throughout, the method has been for Will to use Substance as the raw material of its own advancement and cautiously, by device, to possess and penetrate it.

Inside the universal Ether we have reason to

believe that sub-atoms rotate, themselves composed of nothing but Ether in rotation. If this hypothesis be true, it is rotation which endows the sub-atom with Self and all the properties, electrical, thermal, and gravitational, with which the surrounding ether is disturbed. Thus the local Self originates in spontaneous rotation; that is, it originates in Locality.

What, then, is the true significance of rotation? A fluid in motion may possess rigidity, a flexible chain in motion becomes stiff, a jet of water projected with sufficient force will drill holes through solid matter, a smoke-ring will behave, while it rotates, like a solid hoop, yet in each case the chain, water, and ring, if left at rest, would be flaccid and malleable.

Professor J. J. Thomson has experimented with these rigid fluid rings in motion and has found them to behave, in many respects, like solids. By rotation the local Will acquires a greatly increased and penetrative power. It would appear that in the rotating fluid, itself homogeneous, Will possesses a means of mediation whereby the uniformity of Substance may be defeated and local Self arise, for a rotating vortex both is and is not solid; so also rotating Ether in the sub-atom both is and is not homogeneous.

It will be noted that, without the rotation, the Self of the sub-atom would be without locality. The Self of the sub-atom arises through the fact that rotation, once commenced, continues, in Time, for such a period at any rate as to display a local will and recognizable and nameable properties emanating from it. It is, of course, a common error to regard the sub-atom as mechanically derived from Ether, but it must be admitted

that the sub-atom, like the atom, molecule, and cell, behaves as though it were organized, as if it had a spontaneous Self.

A further method of realization of the Self of the sub-atom is derivable from introspection. If we are conscious of our selfhood, knowing that we are composed physically, by unbroken process, of cells, molecules, atoms, and sub-atoms, at what point can we deny to our constituent organa that selfhood which we know ourselves to possess? Is it not probable that as the common aggregation of cells is possessed of Self, so also are the lesser organizations of which we are composed?

Thus we cannot resist the conclusion that the sub-atom is possessed of Self, and that such a Self has arisen out of the negative of Substance and the spacelessness of Ether, through rotation. In rotation, therefore, is first to be found the secret of local selfhood, and we have, therefore, to ask ourselves in what does rotation consist.

Now, in Ether itself, we have seen, there is a rhythmic flux, a straining; but since that straining is not about a fixed point, no fixed organa can arise, since no permanent centre in the Ether receives or controls the strains, which consequently dissipate by radiation one after the other, like circles in a pond made by a dropped stone, so that each flux is lost and leaves no record. But if the fluxions can react upon one another, so that each can be influenced by the last, a very different state of affairs arises. We are then in such a condition as if each ripple on the pond, instead of spreading ever outwards and dying away, were, by coming into contact with another ripple, to set up a continuous motion which the second ripple would transmit to the third, and so on, so

that the rippling would become a permanent structure.

Rotation effects this by acting in a circle or other closed curve ; in such an orbit, each flux can act on the next, and the last, instead of losing the fluxional impulse by coming into contact with the first, completes the curve and thereby sets up a self-stimulating rotation.

This it is believed is the secret of the rotational Self of the Sub-atom. In the Sub-atom, by the operation of Will, the Ether becomes spun ; each part impels the next, and the last Ether of the series once more starts the first, so that, though there be nothing but Ether present, inside the general flux of Ether is a self-contained, self-stimulating local Organ.

It is this quality of non-causal self-stimulation which constitutes the Self of the Sub-atom ; once rotation is established its causal capacity to disturb the surrounding Ether, by creating an electric field, is apparent. This is its predictable causal property, but its metabolism, enabling it to persist both in Space and in Time, is due to its device of rotational self-stimulation.

In other words, the Sub-atom is a volitional economy whereby each stimulus, instead of merely producing vibrations which are lost, as in pure Ether, acts on another stimulus which, by reacting through a series on the first, produces for the Sub-atom a local habitation and a name.

THE ATOM AS SELF :

The atom, as organism, next demands attention. It may be regarded as being not unlike the solar system, with a large positive central mass and a collection of rotating planets.

These atomic Selves, according to their sub-atomic arrangement, produce the properties of the various elements. It will be noted that here, as in the case of the sub-atom, rotation is the method whereby locality is achieved, for whether the elements be radiant or not depends upon the spontaneous capacity of the atomic Self to retain its sub-atomic members within its system.

While there is but one family of the sub-atomic, the elements, in their causal effects, are found to group themselves into certain classes.

We have spoken of the periodic law at an earlier stage, and without going further into this matter, we are justified in drawing the conclusion that, as atomic weight is in fact the measure of the potency of the Will of one atom over another, information as to the nature of the atomic self must lie in the direction of considering what is the meaning of atomic weight.

The atomic weight is but an observed property of combination of atoms, and thus we see that, while Mendlejeff sought his atomic properties from the weights, it would be more accurate, historically, to seek the weight from the other properties, more particularly from those which are electrical and sub-atomic.

In electrolysis we are able to obtain the valency of elements with electrical influence, and as these valencies fall within the periodic law we shall be accurate if we assume that the affinities of atoms for each other, as shown in the atomic weight and other manifestations of Will, are the result of their electrical and sub-atomic constitution; that is, the Self of the atom is achieved by the organized rotation of the electrical sub-atom around the large positive one, and according to the number

of the rotating rings and their quality, the power of Will in the Atom and its selfhood will be determined.

We have pointed out that the heaviest atoms are radio-active, that is, are least able to control all their sub-atomic satellites; and it appears that in the weightiest of the elements the rings are most frequent and most complex.

In such cases the hostages won from the negative of Substance are considerable, and the possibility of escape is increased by the magnitude of the capture.

THE MOLECULE AS SELF:

The selfhood of the Molecule need not long detain us. We have already examined into the organization and function of the molecule when discussing Things; at this stage we are concerned only with the molecule as Self.

With the passage into the more obviously perceived world, considerations arise which are essential to our proper understanding of Will. Certain philosophers, notably M. Bergson, have denied life to the molecular stage of Being, while, apparently, admitting it in the cellular. On what basis this distinction is founded it is difficult to comprehend. If the essence of life be conscious pursuance of ends, its presence must be denied, not only in the case of the molecule, but also in the cellular condition, if not also in many lower members of the animal and in practically the whole of the vegetable kingdom. If, on the other hand, the essence of life is merely continued local existence, it is difficult to see why vitality should be denied to the molecule. Indeed, as will shortly be shown, in so far as any classification can be

made of a gradual exfoliating process, the hiatus is rather marked by the absence or presence of self-consciousness, a cleavage that occurs at a very much more complex stage of evolution than the cellular.

Indeed, if we affirm that the reactions of the molecule to environment are similar to the reflexes of the human being in quality, we are not exaggerating the position; many of the functions of our body are purely physical, that is, molecular, in nature, and they display the like qualities as does the molecular will, namely, beyond a Will to persist, a rigid and inflexible determination to influence surrounding Substance; a Will so determinate that Chemistry can approach within a reasonable distance of being an exact science.

To say a will to influence is rigid is not to deny it existence. We must learn to distinguish between the purposive Will of the self-conscious, reflecting human being and the more rigid, determined will of less favoured organa. How far the will of man is entirely free may be discussed hereafter; it is our contention that the relative freedom of human will does not distinguish it in kind from the persistence and power of other organa, since both are in essence spontaneous and non-causal.

We must next consider the Molecule as the basis of physical matter. We know how the spatial disposition of the Molecule produces the gaseous, liquid, or solid state, the molecules closely organized in the solid offering an obstacle to the human optical and muscular Will which is reduced in the case of the liquid and still further lacking in the gaseous condition.

Thus, since the continued existence of a complex of molecules depends upon their resistance to

Substance and other local will, we are able to see how the Self of the molecular system increases with increasing organization.

Moreover, in the solid we note that Contact appears as a method of cohesion and persistence even more powerful than that of rotation; a contact of parts produces a Self more intimate and less variable than a rotatory one, where the parts are ever variant and only acquire a cohesion in Time by each occupying the place recently occupied by another.

If, in Ether, Duration is achieved without Locality, in the perfect solid Locality can be conceived instantaneously apart from Duration. In the rotatory condition Duration and Locality are alike essential to existence.

Thus instantaneous existence and independence of Duration strengthen the volitional power of the Self. In the solid the external existence is, *ab initio*, guaranteed by contact of its parts, and further efforts of the Will may be directed to the influence of external environment.

In practice, of course, no molecular system does achieve absolute solidity, but the consideration of the metabolism of rotation and contact go to show how immensely more stable is that latter condition which arises in the solid molecular self.

THE CELL AS SELF:

It is thus not from chance that both the physical basis of the cell and that life which is based upon it are contactual in structure. The necessity for solidity or contained liquid for the more vital organa arises from the fact of the superiority of the metabolism of contact to that of rotation, of which we have spoken, and because in the

contactual state the preservation of internal energy by instantaneous self-stimulation of the parts is much increased over the periodic stimulation of rotation. It is the difference between the picture and the cinematograph.

It is not necessary at this stage to trace the development of the contactual physical, as exhibited in carbo-hydrate colloids and protoplasm, which results in the Selfhood of the cell.

We have to note that every living creature, simple or complex, starts its individual existence as a simple cell.

In the simplest Selves the excess over metabolism shows itself in an accumulation of protoplasm which results in a division of the cell into halves, each of which in its turn assumes the size and shape and selfhood of the parent cell.

The actual molecular material of which the original cell was composed is thus passed into the two daughter cells, so that, while there is a destruction of the metabolism, and thus of the Self, of the parent cell, the quality of that metabolism is inherited and passes undisturbed to the parts.

Here we perceive a third method of the retention of Will. The rotational and contactual are supplemented by a hereditary quality which, by acquiring additional contactual organization in each individual, is able to avoid the peril of the destruction of such qualities with the destruction of the individual, as is the case in the molecular stage, by handing the qualities on to two daughter selves, who thus start their selfhood endowed with the metabolism of their ancestors and are able, in their turn, to augment it in a manner which is not possible in the molecular stage, where self and properties stand or fall together.

Our conspectus of the development of local Self has so far shown us an evolution arising out of a continuity of rotation which next achieves the more durable condition of contact; from contact we pass to heredity, and side by side with it we perceive the differentiation of Self manifesting itself in parent and child, in body and nucleus.

At the lowest stage of admittedly purposive organization, the whole Self, as such, is sensitive; this is the case with the lowest protists; at the second stage, very simple and indiscriminating sense organs begin to appear on the surface of the organism in the form of protoplasmic filaments, as in the higher protists; at the third stage, specific organs of sense, each with a peculiar adaptation to resist competing Wills, have arisen by modification and progressive heredity out of the rudimentary processes; the fourth stage is reached by the centralization of the nervous system, and, consequently, of sensation; by the association of previously isolated or localized sensations correlation arises: this is the condition of many of the lower and higher animals; and, finally, at the highest stage of psychic function, conscious perception is developed into conception by the symbolization of the sensations in language in a self-conscious Self.

At each stage sensation appears in an increasing number of orders, and a greater heterogeneity and differentiation is won from Substance, and at each stage the frustration of the negative of Substance figures as increase of local property and evolution of local selfhood. With the conclusion of the examination of the unself-conscious self we pass to the domain of Knowledge and the Knower.

THE KNOWER:

The Knower, who is the most completely self-conscious and non-causal Self, must be considered as necessary as well as contingent. For since Knowledge is the subject of metaphysical predication, the Knower, the stadium to which Knowledge is presented, must figure as object of metaphysical statement in Being as well as the subject of Knowledge. The Knower, like Will and Substance, can never pass within Knowledge.

From the contingent standpoint we have discovered, developing out of the more simple and rigid wills of lower organa, that, within the Self, there arises a tripartite condition, namely, a something felt, an Ego, and a reaction of that Ego on the sense data presented to it.

Now, sense data are to the Self the subjective obstructive aspects of the Wills of other organa, and, as the Ego, in so far as it is self-conscious, has for its sensational content just those obstructions of other local Wills and the thoughts stimulated by them, were the Ego to possess and penetrate all other local Will, his sensational knowledge, arising out of obstruction, would disappear. This conclusion is made more evident if we consider the case of a single Knower confronting all Substance, in which all local wills are absent—that, is, a pure Substance, bereft of organa—and ask ourselves what would be his knowledge.

It is clear that such a Knower would possess a Knowledge bereft of Event, and, lacking Event, language and all other necessary symbolical representation would also be wanting; so also would Thought be absent, for Thought must employ symbol as its instrument and rely upon Event as its material. To such a Knower, therefore,

no Knowledge could be presented, and, in so far as the capacity of the Knower is dependent upon his Knowledge, such a Knower would be wholly ignorant.

It is clear, therefore, that the enrichment of the Knower cannot depend entirely upon the complete penetration and destruction of other local Will; some other organa must be to the Knower good, in that, by existing, they enlarge and enrich Knowledge, while other Selves are hostile and destructive of the Knower.

The Good is the subjective quality of that local Will which is valuable to the Knower, and in so far as other local wills contribute to such an end, they are, to the Knower, beneficial.

Internally, in metabolism, the problem of the Good is involved in all organa, for it is clear that those parts over which the Self holds sway are good in so far as they minister to his continuity. Thus to the Sub-atom the etheric whirl is good, its cessation bad; so, to the cell, the metabolism of the colloids and the protoplasm is a Good.

It is the weakness of the unself-conscious Self that, externally, whether the environment be good or hostile, its nature must remain a matter, for the most part, outside the control of the self. With Thought, however, the potential quality of environment can be ascertained and its future behaviour predicted, so that, finally, in craftsmanship and in art, the self-conscious Self may actually remodel the surrounding local Will prospectively and translate its unco-ordinated activities into Goods which shall serve his purpose.

Thus purpose, which is the characteristic of the Knower, consists in the exercise of the Will with which the Knower is endowed in the direction

of the frustration of those local wills which are inimical and the toleration or encouragement of those which yield satisfaction.

We may liken Knowledge, particularly that which arises from sense data, to the scenarium of a theatre, the Knower being both audience and scene-shifter. All scenery alike offers opposition to the view of the vast empty stage beyond, but some is pleasing to the eye, and thus, although it is a screen to further observation, it is tolerated, while other obstructions, like the intervening hats of ladies, have no such justification.

The tripartite condition of the Knower becomes increasingly related to his purpose, and the property of Things in Event, by involving predication of their behaviour, involves a consideration of ends. That which is presented alogically to the consciousness is considered potentially in the reason in relation to its kinetic possibility, and it is the quality of this mental consideration, with its assumption of futurity and uniformity of cause, which constitutes the reaction of the Thing on the Knower in Thought. Thus the Knower in Thought is essentially volitional and teleological in that all consideration of properties evokes purposes and ends.

Now, the purpose is itself the expression of the Will; it is the operation of all Will curtailed within the particular conscious organon, so therefore Thought, which is a product of purpose, is also an effect of Will, and the qualities of the Knower, far more than those of the unself-conscious self, are volitional in essence.

As in discussing Method we saw that all reason is based upon guessing or volitional inspiration, so now we perceive that the distinction

between the instinctive and rational emotion is one of degree, of method and regulation.

THE KNOWER AND THE SOCIAL GOOD:

The later stages of symbolic representation in idea only become possible in social co-operation, and in the desire for co-operation, rather than for dominion over other egos, we see the social good at its highest expression.

The genesis of the social nexus may be traced from the rise of the reproductive device of perpetuation in parent and child, through the collateral continuity of kinship, to the present conception of territorial and industrial society.

In social good, the presence of a more or less similar character in the consciousness of other local Wills is not wholly resisted, and to the normal Ego, the benefits derived from language and common knowledge exceed the disadvantages of possible dominion by others.

In the perfect social condition, the Will of each subserves and enriches the will of the others. In Society this process is strengthened by the fact that the ordered and desired conflict of Will takes place rather upon the mental than the physical plane.

Society is thus distinguishable from other organa in that, being predominantly mental, the order of the human parts must depend not so much upon a rigid obedience to the physical metabolism of the whole as upon a mental acceptance of the social being.

This appearance of mental nexus marks a further stage in the evolution of local self from the rotational, contactual, and physiologic state. In the human social organism, being mental,

language and symbolism become of vital importance in providing a means of communication between the mental units, and, what is even more important, the necessity for mentality produces a need for freedom of the cultivation of the human Will, without which the necessary social mentality cannot arise.

Just, therefore, as the nexus of the sub-atomic is rotational and that of the solid contactual or physiological, so the nexus of society is sympathy, and, since society lives by its mentality, and since the mentality of each member is largely dependent upon the mentality of the whole, in that language is a traditional and social product, the Will of society expresses itself in the increasing mutuality and affection of its members.

The ignorant, the oppressed, the curtailed, by increasing the causal as distinguished from the volitional aspect, thus diminish the effective Will of the social organon of which they are a part, for the method of penetration of Substance by Will which is open to a society is such that it necessitates a growth of sympathy between its citizens. For this reason authority is dangerous, for it tends to cause that which should be volitional to become determined.

In the ill-constituted society in which we live, competing allegiances make their demands upon the individual, and the will of others is often presented as a very real obstruction to good effort and not as a sympathetic one.

Of these real obstructions to the individual the most patent is that of the desire for dominion and personal acquisition. Love of personal power and acquisitiveness are common to all people in varying degrees, and manifest themselves in the

monopoly by individuals or groups of those material goods which provide the necessary environment for society such as housing, clothes, and food.

This denial of life to the many, whether by monopoly of land or capital, permeates all Society and produces a cleavage of sympathy between the possessors and the dispossessed which is sometimes referred to as the class war.

The class war between groups of Wills possessed of power over nature and those deprived of it is overlapped by cleavages of racial and territorial nationality.

The disagreement among modern socialists on the question of Nationality and War reveals conflicting aspects of the social good; loyalty to class and loyalty to country make competing claims upon the allegiance of the social unit, but signs are not wanting that the lesser and more artificial cleavage, the territorial political one, will be assuaged long before the class cleavage is ended by the disappearance of the vice of acquisition.

A further peculiarity of the social organism arises from the fact that, being founded upon mentality, it is peculiarly prone to the weakness produced by a purely mental and secondary outlook. Especially does it run the risk of words being misused for emotional results, and, as the average citizen has not the metaphysical insight to appraise the limitation of his own mentality or the mentality of others, Society is ever in danger of disruption at the suit of wordy and romantic persons who contrive to distort the mind with confused images which have no direct correspondence to economic or social contingency.

The power to think tends to produce the Will to believe, and Society is ever in danger of being destroyed by secondary romantic appeals, a danger which does not arise in the rotational, contactual, or animal state.

THE KNOWER AND WILL:

The social nexus of a community of free Knowers has a particular importance, because it is through Society that language and æsthetic symbolism arise, and because it is through language that conceptual Knowledge becomes possible.

Although, for the sake of convenience, the conscious process may be divided in its later aspects into Knowledge which is alogical and that which is logical Knowledge; the former being produced by the immediate opposition of local Will and the latter by a self-stimulated opposition within the consciousness itself, both logical and alogical knowledge confront the Knower as his consciousness, and both condition the Knower in that, without his Knowledge, the Knower lacks all possession.

Thus, though the Knower is in a sense beyond his Knowledge and a word of Being, his nature is intimately associated with his Knowledge.

What, then, is it which distinguishes the Knower from his Knowledge and gives to him the sense of unity and independence? It is his Will.

The local alogical Will, as it appears in the lower organa, figures in the human Knower as action following upon reflection. In all organa Will manifests itself as Want followed by spontaneous Satisfaction; only in the human stage there is introduced an introspection of that Will in Reason.

To say that Will arises in Want is to admit Event in its double aspect of Duration and Locality into the problem, so that no sooner is the conclusion reached that the Knower is the product of Will and Event, than the further question arises: What is the relation of Event to the Knower?

The same problem may be put by asking how far the Knower is within the contingent time-space process.

It is clear that in his alogical knowledge Duration and Locality are involved; it is equally clear that in the logical the world of discrete event is unified and mediatized in a form in which it may be presented to the Knower and so grasped as a whole. In man the tyranny of cause is largely avoided by volition.

Logical Knowledge as distinguished from alogical is not itself the creature of contingency alone. In logical knowledge necessity of thought arises, and necessary thought, unlike contingent, is true outside Event. Thus it is not all Knowledge, but only the primary alogical, which is eventful, and this primary alogical is itself the subjective aspect of other conflicting local Wills.

Thus Time and Space are seen to be the logical subjective interpretation of conflicting local Wills. The table as local Will impedes my penetration of it and so produces a sense datum of table in my alogical consciousness. I am not conscious of Time and Space, but only of optical and material impediments. By the time my logical knowledge caused by the concept Table has arisen, the table of Event has passed, so that, when I think of the table in terms of Event, that which I consider is already outside Event, while, when the table is in fact wholly in Event, I do not correlate

and consequently cannot think of it descriptively as such.

So, therefore, in Knowledge by sense data there is Duration and Locality, but no knowledge of them, while in Knowledge by reason there is knowledge of Duration and Locality in time and space, but no Duration or Locality.

Now, therefore, since both classes of knowledge are presented to the Knower, it is clear that the Knower himself is not wholly the creature of Duration or Locality. He is both in Event and out of it; the Knower reconciles the acquainted thing and its descriptive quality, but he himself is neither Thing nor quality; he is what he himself can never know himself to be: he has needs, but those needs are not himself; he acts, but he himself is not the actor; he is necessary, but he himself is not his own necessity; he is neither causal nor determinate, but self-conscious Will.

Thus, were the Knower to overpower all other local Will he might be completely free, because it is the opposition of other Wills which curtails his possibilities. In other words, the limitation of his will does not arise *ab initio*; at the outset his will is to be conceived as untrammelled; its curtailment arises from the opposition of his own organon and of other Wills, and what appears to be determined as a cause is in reality an effect.

THE KNOWER AND THE BEAUTIFUL:

Our conception of the Knower as the self-conscious self of the human organon, endowed with conscious Will, must next be supplemented by a consideration of the operation of that Will and the form which its expression tends to take. The comparatively rigid, though volitional, im-

pulse of the unconscious self is, in Man, possessed of conceptual Knowledge, is supplemented and modified by a consideration of ends—ends which may be described as the pursuit of the Good, the Beautiful, and the True.

Of these three norms, the æsthetic is that most akin to the alogical conception of the lower organa, and to it consideration will first be directed.

The nature of the Beautiful is a problem which philosophers have tended to ignore or neglect, but a consideration of the ontological nature of Will should assist us in understanding it.

The Pleasant, which, in its higher aspects, we describe as the Beautiful, is a condition arising essentially out of sensation, and since sensation is produced by the opposing Wills of other organa, the pleasant may be said to be a condition produced by those Wills of other organa whose obstruction to our penetration does not offend us. At the stage of the pleasant this external local Will either is or is not accepted as such, but, with the appearance of conception, the quality of the pleasure is itself understood and enjoyed, and a true idea of the Beautiful arises.

Thus the Beautiful is to the pleasant what logical Knowledge is to alogical. In the pleasant the Will to dominate is placated, in the Beautiful the abatement of the will is itself relished and preserved. Thus of the Beautiful it may be said that the Will of the appreciative Knower towards it is completely quieted; he does not desire to alter his beautiful environment, but, seeing it perfect as it is, is satisfied to remain with its appreciated obstruction. The purpose of Art, therefore, is so to control local Will, that is, to adapt Matter, that the Will so controlled

satisfies the Knower optically or acoustically, in painting, sculpture, or music.

This condition of contented Will, this ecstatic æsthesis, varies from individual to individual, but, just as man, by reason of a common power of Will, receives some common impression of matter in the consciousness, so in things Beautiful a certain common contentment is to be found.

THE KNOWER AND THE GOOD:

If the Beautiful is that local will which satisfies the Knower's desire, the Good is that action which maintains and stimulates his continuity.

In so far as the Knower is one of a community, the good of the community in an imperfect society may conflict with the local good of the individual.

It is believed that a life harmonious with the totality of organa is the best and best serves the development of the Knower. The love of fellows may therefore be supplemented by a love of animals; a love of animals will lead to a love of other less purposive organa. We learn with St. Francis to speak not only of Brother Wolf, but of Brother Tree and of Brother Stone, since all organa are alike maintaining a ceaseless struggle against homogeneous Substance.

In proportion as the knowledge of Totality increases, so should the desire to moralize and judge diminish; the Knower will realize the limitations of the Will of others from a contemplation of his own deficiencies. He will tend to ascribe to others the temptations and failures which he knows to assail himself, and, above all, he will appreciate the absurdity which the sententious and critical produce through petty arrogance of judgment.

Of all Goods of which the Knower finds himself possessed, perhaps the most priceless is the gift of Comedy, and Comedy essentially consists in a man not taking himself or his opinions too seriously. He must realize that his metaphysic, his art, his science, are but tentative, and, for the most part, pitiably absurd attempts at the solution of problems of gigantic import. Yet, just in so far as he is in a position to attempt to appreciate Being at all, he will also realize the seriousness of his task. He may realize the comic spirit to be, perhaps, the best corrective alike to the Solemn and to the Flippant. Progress, it may be said, lies in the triumph of freedom and responsibility over causal restraint and mechanical discipline.

THE KNOWER AND THE TRUE:

In the relation of Truth to the Knower we touch the root of Reality, for, if our conception of Truth be false, then our metaphysic is false also.

We have shown how metaphysic is dependent upon the use of words and how words are symbolic of concepts themselves cinematographical of Event. Metaphysical truth, we have said, must be prepared to be both contingent and necessary. Contingent in that it must satisfy all known Event, necessary in that logic, the description of that Event and the conclusion drawn from it, must not fail through poverty of reasoning.

As Goodness and Beauty vary to different Knowers, yet have a certain constant among humanity, so Truth, in so far as it is founded upon Event, must also, to some extent, be various. The wider the class of Event, however, the greater the possibility of common agreement. The more

particular the occurrence, the greater the chance of disagreement in its interpretation.

Thus metaphysical truth must be an adequate description of the Known universe of sense data which satisfies all events, and also of all logical necessity, and must be accepted as such by mankind as a whole. It is the purpose of philosophy to achieve such an ideal truth.

The Will of the Knower is satisfied in the Beautiful, is stimulated in the Good, and becomes self-conscious in the True. All three norms arise out of the expression of volitional purpose in local human will.

CONCLUSION:

We have now surveyed the self-conscious Self from three aspects—as psychic local Self genetically considered, as Self in society, and as Knower beyond Knowledge; it remains to attempt a co-ordination of these three ideas.

As regards the psychic self, it is clear that these Selves can only be understood by the Knower as they present themselves in other Knowers and Selves.

For reasons which we have explained, the Knower as Being must remain to himself unknowable, since to him all Knowledge is presented, so that he is ever beyond it; but, as regards other Knowers, there is no reason why they should not figure, at least in one aspect, as genetically developed in unbroken process from the unself-conscious selves to which we have given attention. Now, these other psychic selves are clearly within the knowledge of the Knower regarding them, and thus we are brought to this position, that each Knower is to himself predicatable in Being

alone, while all other selves are contingent and within Knowledge. This conclusion, however, merely serves to raise another difficulty, for, once Solipsism is abandoned and a continuity of Knowers is conceded, we are faced with a condition in which the Knower objectively appears as within Knowledge (through inference from others) and subjectively without it.

The solution of this apparent paradox is to be found in the third category of Self, in the social Self. The social Self assumes the influence of other selves in the Knower, and so postulates the penetration of his Being by contingency. Thus, finally, we are brought to a conclusion that the Knower is a link between Being and Knowledge, and that the Knower is dual in nature.

Just, therefore, as conceptual knowledge reconciles the plurality of sense through symbol to the singularity of the Knower, so the Knower, in his turn, reconciles the plurality of Knowledge with the singularity of Being.

Finally, we must conclude that all Self, logical or alogical, is the product of the contact of Will and Substance. Will, entering Substance, creates in the latter organic ganglia which, by the processes we have discussed, produce stable focals in which the Will is locally absorbed and thus produces those local manifestations of energy and self-consciousness which are the characteristics of local Self and the Knower.

PART IV

CONCLUSION

CONCLUSION

INTRODUCTORY:

Our investigations have now reached a point when it becomes necessary to clarify our conclusions as to the nature of Being by a final consideration of the means whereby we have arrived at them.

In our approach to the problem of Being we have employed two bases on which to build our conclusions; the norm of Method and the stadium of Data. As Metaphysic is a process of verbal statement, we have first considered, in Method, the nature of statement and the materials composing it, together with the implications and limitations necessitated by verbal exposition. In Data we have examined the possible material of statement, that is, the data of sense and the data of ideal representation.

It is clear that, whatever our conclusions as to Being may ultimately be, they must depend upon the soundness of our method and the value of our estimation of data. An adequate understanding of data, investigated by faulty method, will produce a bad metaphysic; so also a sound method applied to data insufficiently appreciated will fail. The validity of both Method and Data is essential.

In our final summary it cannot be too constantly borne in mind that all metaphysic consists

of verbal statement, and that, whatever our conclusions may be, they cannot exceed the limitations imposed by the use of language.

Statement, we know, must ever involve a subject and a predicate, together with a Knower to whom statement can be presented.

We have conceived a cosmos of organa, possessed in varying degree of volition, involving Locality and Duration and conditioned by the penetration of Substance by Will. Each organon, itself a focal of Will, in its most purposive stages, achieves self-consciousness, so that the other organa present themselves to its sense data as Things, and, in a still more purposive condition, in conceptual representation as Universal, and it is in this latter representative conceptual medium alone that metaphysic operates.

Thus Method and Data, the necessities imposed by statement, and the sensations and thoughts which statement purports to describe, are the sole bases of Statement, and sense data and thought together go to make up that subject Knowledge whose predicate Ontology seeks to establish.

The effort of Metaphysic to predicate Being demands a criterion whereby its validity may be judged, and such a standard is believed to have been achieved in the notion of the co-existence of contingent and necessary validity.

Contingent truth is conceived to make such accurate descriptions of sense data that the predictions based upon the description will or can be verified in the Event. Necessary truth has for its purpose the formulation of those conceptual requirements without which true statement itself is impossible.

Thus, so far as the How of Event is concerned,

the causal continuance of property in sense data is a necessary assertion, arising from the use of words; Duration and Locality are also necessary assumptions, while the specific properties of sense data, described in words, are contingent, and rely upon their fulfilment for their validity.

Now, in Totality there cannot be any Event, for Event involves lacunæ, in that Things, in Event, become something other than what they were, and so cannot originally have been self-sufficient.

Yet, though Totality is not in Event, Event must find a place within Totality, and, for this reason, no assertion as to Totality, no ontological statement, can be true which does not include all contingent assertion.

It is thus that we arrived at our predicate to Knowledge of Substance and Will, for Substance and Will alike exist in all organa, and are therefore contingently valid.

But it is not enough, however, as we have seen, that metaphysical statement should satisfy contingency, for such a statement would assume its necessity and fail to analyse it, and so be incomplete. Words of Being must be necessary as well as contingent; that is, they must, of necessity, be involved in the very use of language at all, and such a condition we also found to exist in Substance and in Will.

Thus Ether is contingently true, but not necessarily so; while Duration, Locality, and causal sequence have necessary, but lack contingent, validity. It is believed that Substance, Will, and the Knower alone satisfy both requirements, in that, on every ground, the conception of their absence is impossible.

Given the recognition of this fact, much of the

task of Ontology is accomplished; we may now safely predicate of Knowledge a Being in Substance, in Will, and in the Knower.

As regards the Knower, this word of Being in the last analysis proves to be a compound, for the Knower and his Other, the Things of his environment, are subjective and objective aspects of the penetration of Substance by Will. Duration and Locality mark the progressive stages of the penetration and figure to the self-conscious Knower in conceptual terms of Time and Space.

METHOD:

With these introductory observations we will proceed to consider our stadia and conclusions in somewhat greater detail, and first of Method.

In Necessity we have seen that Statement, the only method of meeting philosophic requirements, must be satisfied *ab initio* if words, Statement, and Metaphysic are to be justified. At the outset, therefore, we should ask ourselves what necessities are involved in Statement which, *a priori*, determine our attitude towards contingent Event. Of these *a priori* necessities, the first which arises is that of constant property in Things, demanded, as we have shown, by the use of words.

Now Things, ontologically, resolve themselves into Substance and Will. Substance is similar in essence in all organa, but organa vary and are localized by the degree of the penetration of their Substance by Will, so that as nameable property, that which distinguishes one word from another, arises from individual behaviour, we may affirm that the necessity of constancy of property involves constancy of local Will. Such constancy of Will means that local organa can volitionally

preserve their internal metabolism sufficiently long to remain within the same nameable class, and also, in the external manifestation of their Will towards others, can retain sufficiently constant properties to be nameable.

We have seen how in the noun, in description, we can recognize the first condition, the Static, and how in the verb, in Event, the second condition, the Dynamic, arises. The distinction between noun and verb may be regarded as a distinction of freedom of Will, since for a thing to remain nameable as such it cannot continue to be other than itself. The Event flowing from the Thing can be various so long as the Event does not contradict the essence of the Thing.

A new aspect of *a priori* categorization is thus opened up by a consideration of statement.

Contingently, in the world of science and fact, in the " How," there is no reason why " Event " should not be miraculous, there is no necessity that it should always act in a similar manner, but without such a causal similarity, naming and prediction would become impossible ; so, therefore, causation and its elements, time and space, are necessities of thought, and the miraculous is its denial, not only as regards subjective ratiocination, but also in objective statement. In the " Why," however, the existence of organa is spontaneous, volitional, and causally inexplicable.

The mathematical criticisms of time and space which appear in many modern metaphysical treatises do not destroy the categorical assertion of Duration and Locality as necessities of Event in Statement ; nor does the criticism of the neo-Hegelians meet the point that Metaphysic, being a matter of statement, requires

Event in the logical and so necessitates Time and Space.

To say, however, that prediction is a necessity of statement is not to give to Duration contingent objective validity, as Bergson would desire. For Duration, to be an element of Being, demands contingent as well as necessary validity, but the innate limitation of Duration and Locality alike is that whereas their necessity can be amply demonstrated, it is impossible to give to Duration contingency, because it is not experienceable as such, but only assumed in necessary statement.

Thus in Statement the three necessary categories of time, space, and causation must be assumed, for without them Statement is impossible.

Another essential of Statement is its contingent duality: the Thing, the sense data named, must always be other than the Name itself.

Statement assumes a double world—a world of Things, of sense data, and a world of Ideas, or as it has been termed, Knowledge alogical and Knowledge logical.

It is, as we know, the agreement of the described named logical knowledge with the assumed Event of the alogical which gives rise to contingency, and, that contingent statement may be justified, Causation, Time, and Space, though not themselves contingent, are as much necessary as they are in necessary statement.

The above comments upon the statements of contingency bring us to the supreme task of Method, the Statement Metaphysical.

We have said that Metaphysical Statement must satisfy two requirements: it must be the predicate of Knowledge, which, in so far as Knowledge is either contingent or necessary, involves the further

requirement that Metaphysical Statement must be contingent and necessary too.

Our predicate of Knowledge has resolved itself into three irreducible elements: a Knower to whom all knowledge is presented, Substance, and Will; and these three notions we have asserted to be both necessarily and contingently true of all Knowledge.

It is abundantly clear that necessity and causation in Things arise solely from an expectation of uniformity, which expectation, founded upon memory of past events, is elevated into a creed by the use of language.

In so far as the future is concerned, it is the use of words alone which gives rise to the belief in cause and effect, for, without the assumption of causation, as we have already seen, words become meaningless through the Things which they symbolize becoming bereft of their nameable properties.

We know how, since metaphysic depends upon the use of words in statement, Causation and its radicals, Time and Space, must be assumed in metaphysic, yet, when we make the initial assumption of a necessary logical causation, we are immediately brought up against the problem of Will.

The essence of the idea of non-causal spontaneous local Will is that things are what they are by reason of initiatory effort finding expression in local organa. It is clear that no one organon in itself directly contributes to the metabolism of another; under the control of man, animals may minister to his life, but the continued existence of Things cannot be traced so obviously to the efforts of their neighbours.

It is clear, on the other hand, that the efforts towards disintegration produced by the neighbouring environment upon a local Self is calculable in Science and nameable in Method. What defies causal analysis is the Self of the organism, is its initiatory power of persistence in the face of environmental attack. This indeed is miraculous and inexplicable.

It is curious that those who propose a mechanical solution of the universe have not fully realized this obstacle in their way. There is in Science no causal contingent reason to be found why atoms should organize into molecule, molecules into cell, or cells into man; the struggle for survival does not explain it, and we are driven to the conclusion that the local Self is essentially causeless, and that, while the material upon which it can operate is determined by Event, the Self in its Will to persist and to expand is not the creature of causation. Evolution, the specious introduction of new elements not initially assumed, in Progress displays the poverty of a causal explanation of Being.

Thus it is that the Knower and the Will must figure as Being, and cannot be brought within conceptual Knowledge, for in logical Knowledge all things must be causally interpreted.

The properties which emanate from each local organon and their obstructive influence on other organa, together with their penetrative power of Pure Substance, can be causally evaluated and named; that which defies analysis is the Self in which Will creates the impression of consciousness through obstruction of others.

From this we perceive that whereas the properties of Self are all determined according to Event, the Self is not the creature of Event at

all. Here is to be found a solution of the age-long dispute as to determinism and free will. They are the objective and subjective solutions of the same problem. Considered in terms of the Self and Will, the causal obstruction of others, figuring as Things in the consciousness, is freely grouped by the Self within the capacity of its metabolism; considered in terms of the power of the Self, when once established, the properties of other selves figure as determined, causal, and nameable.

It will be noticed how, while the Self knows intellectually that his actions are determined, he feels that they are free. That is, in the logical, naming involves causation, but in the unnameable alogical the actual wills of local organa are felt to be free, as indeed they are.

Thus in Truth, in the employment of the logical, the requirements of the symbolization produce a symbolic world which demands reconciliation with that contingent world of sense data which is not inherently causal, and in which Truth as such has no part. Truth itself is the product of logical process alone; it is concerned solely with the quality of logical statement, and therefore in it the purely alogical can find no part. How, then, are the requirements of logical Truth and alogical fact to be related?

This problem arose, it will be remembered, at an early stage of our enquiry. When data were the subject of discussion, it was soon perceived that, even in considering the world of sensation, common sense and science alike demanded the use of the logical, though, indeed, applied to the alogical, if any progress in understanding the physical world was to be made. It is therefore

idle to attempt in Metaphysic to escape from logical process and symbolical representation; the attempts of Bergson and other philosophers, who agree perhaps in nothing else than this desire to escape from the logical, have shown us the difficulties of the task.

Yet within Truth a distinction can be drawn between statement as to Method itself, where necessary consistency of the symbolic representation is in question, as in logic and mathematics, and truth as to Things which, though logical in a sense, yet endeavour contingently to appreciate the alogical in so far as this is possible.

Neither truth, however, is complete, and as Knowledge is of two orders and each order has its truth, is it too much to assert that only in the combination of both requirements, of necessary and contingent truth, can we hope to approach adequacy in metaphysical statement?

Let us once again consider the full import of metaphysical assertion. True sensual Statement, we know, assumes a generalization which will be satisfied in prediction and Event, and if Things, as we believe, are local organa subjectively regarded, Contingent Statement, when not merely predictive, will go so far into the nature of Reality in science as to establish and evaluate the capacities of Wills, or, as they are more usually called, the properties of Things.

Such an investigation leaves over the problem as to the nature of the assumptions and process of the symbolic verbal tools with which the process of investigation has been made; this is the province of Necessary Truth, in logic or in mathematics.

Finally, therefore, in the combination of these

two, the whole world process, so far as we are able to appreciate it, is revealed, and our investigations have been pursued until we have been brought up against the ontological notions of Substance and Will, which defy further analysis.

Yet our work so far has not been unfruitful. Our Method has given us a criterion of Truth, our Data have given us a contingent conspectus of the Universe. The first essential, that of Method, has now been further discussed; we must next proceed to reconsider Data in the light of our present knowledge as a preparation for our final conclusion.

DATA:

In considering Data in relation to Method, it is vital to realize that the conspectus of the alogical is essentially a logical process.

We speak of the contingent world as Event, but the notion of Event is itself a symbolical one and involves the recognition of a Knower to whom Event can be presented. Thus we find ourselves in this tantalizing position, that no sooner do we raise ourselves out of the world of Event by mentality than we find ourselves by that very process unable to survey it otherwise than symbolically, whereas, while we are in Event ourselves, we are not in a position to understand it at all.

We do not propose to recapitulate the arguments whereby we arrived at the conclusion that Things in the consciousness were conflict with other local Will. We have seen how the whole universe in Event consists of organa and how each is present as obstruction or Thing to the other. It is not, of course, suggested that this obstruction is realized

otherwise than sensationally in the simpler organa. It is only at a later stage that obstruction, past and prospective, can become conceptualized.

The problem of Time and Space in the physical world next demand attention. Time, as we have seen, is a mental relation between the Knower and the Event, and is differently interpreted by different persons upon different occasions. What rather we have to ask ourselves is whether Duration can be conceived to exist apart from Time in the mental category.

It is clear that the Knower, to whom Knowledge is presented, is not himself in Time, since Time is the category whereby he appreciates Event, though to the lower organa Time would appear to present itself as mere priority of occurrence. The conception of a world of Will tends to give to Effort a more immediate reality than to Thing. The dynamic, thus appreciated, conditions the static, and to the dynamic in local Will Duration is essential.

We must endeavour to conceive Duration in terms of æsthetic satisfaction of effort, rather than in the more mental notion of Time, to understand the nature of contingent process.

Locality also, we have seen, perhaps even more clearly than Duration, is the condition of obstructed effort, so therefore we must define Duration and Locality as the norms of activity of local Will; that is, the local opposition to local Will, not being a constant, as is the disintegrating negative of Pure Substance, presents itself to the lower organa in terms of priority of physical obstruction, and to the higher in terms of Time and Space.

We have spoken of Substance, but it is clear

that in Pure Substance neither Duration nor Locality obtains.

Duration and Locality arise in local conflict; indeed, they are, in one sense, the local conflict itself, for it is in terms of Duration and Locality that local Wills contend.

The aspect of sense data as opposing Will involves a continuity of such data in Duration and a differentiation in Locality.

Duration, thus considered, is essentially an aspect of Will, for Will is not instantaneous, but, in so far as it connotes desire, effort, and fulfilment, assumes a priority of the desire to the effort and a priority of the effort to its satisfaction. Thus Duration is not so much a question of Time in the subjective sense as of priorities; of Order rather than of quantities; in other words, just as Things are but manifestations of resistance to Will, so Duration is principally an aspect of the Will, itself arising from volitional priority. As Duration arises in the nature of Will, so Locality arises in its operation, for Locality is produced by the degree of obstruction of other Wills.

Duration represents Will in its passive and Locality in its active aspect. A Will completely penetrative, such as that of Ether, is in Duration but lacks Locality; that is, while, in its passive aspect, it demands order in priorities and sequence, seeing that Ether encounters no obstruction in its path it has no active properties, and therefore is without Locality.

Next we must summarize our conclusion as to Things. By Data we mean the whole of the universe which is presented to our consciousness. We know that such data are only appreciable through the medium of logical description, for

Pure Sensation, like Pure Being, we are aware of, but cannot know in the conceptual sense.

This being so, we have to ask ourselves what constitutes such data apart from the material which is presented mediately or immediately to our consciousness.

For reasons into which we have already entered, we have shown that there is cause to believe that a sense of external things arises in every case from a feeling of obstruction to further penetration, and that such obstruction is in fact the subjective interpretation of another and hostile Will which asserts its individuality, and so figures to itself as Self or Knower and to other Selves and Knowers as Thing.

Thing and Self, therefore, are the objective and subjective aspects of Will localized. To John, James figures subjectively as Thing; to himself, John is Self and Knower, so also to James, as Knower, John appears as Thing.

Now, however, we have to ask ourselves the further question: What is this Knower which is also Thing, and why is it that as Thing each Knower appears on analysis to be an organism? The organistic nature of Things (or Knowers) is to be found in the consideration of Substance. Will, localized, demands Duration and Locality, from which, as we have seen, arises its local habitation and its name.

We have seen how Time and Space are the conceptual notions of Duration and Locality, the latter being the sense data, immediate and alogical, and a distinction has been drawn between Time and Duration and between Space and Locality in this connection. The Knower is not in Time or Space, but interprets other Knowers as Things

in such terms, while the Thing, which does not interpret, and so is not conscious of, Time and Space at all, endures in the estimation of other Knowers and has Duration and Locality.

Both Duration and Locality, we believe, arise out of the conflict of Will with Substance. But as both Pure Substance and local Will as Knowers are alike words of Being, we are still left with the problem as to how Duration and Locality develop out of the protyle.

To the question whether Substance has properties we might at first be inclined to answer No, seeing that Substance is without Duration or Locality; but on consideration we see that there is a property which we are inclined to give to Substance, namely, the property of being propertyless. Now, it is because Substance persists in its propertyless condition that we have said that the Substance was negative and disintegrating; it is because Will localized persists in its propertied state that we have assumed that local self was positive and active, and, just as the Will of local organa must be distinguished from local organization in matter, so Will differs from Substance.

There would thus appear, in the last analysis, to be two elements in Totality: Substance, the passive and negative, and Will, the active and positive.

That the world is paradoxical is no new discovery, and, if our conception of Will and Substance be correct, it could not well be otherwise.

We note that whereas the tendency to disintegration is general, the Will to integration is particular; that is, chaos is uniform but cosmos is complex. Thus the process from Substance to

local organism is one from simplicity to complication, and the reason for this is that Will has to fight a battle against a powerful adversary, and in each local organon Will takes what way it can to win a local independence.

That the stabilization of Will is precarious we know. By rhythm, by yielding, by aggregation, by heredity and sexual reproduction, and lastly by mind, Will has endeavoured to maintain itself against monotony.

Moreover, civil war between one local self and his brothers, strife with other organa, and conflict with organa of his own class, have not assisted the self in his contest with monotonous Substance, nor does there seem any reason to suppose that local existence will ever be anything but precarious and temporary, though on this matter there is, of course, room for difference of opinion.

Thus ideal energy without motion comes to be contrasted with terrestrial motion without energy, a condition much admired in modern days, and behind both lurks the energyless, motionless monotony of the protyle.

It would thus appear that Will, in opposition to Substance, differs in its effects according to the organon on which it operates. In other words, it is not the physical condition of the organon, as commonly supposed, which produces the life and Will, but rather the physical condition is the effect of the operation of Will; while the physical condition of other Will, localized, produces those limitations of expansion of Will which figure to each Knower as sense data, and so produce an impression of heterogeneous environment.

We have conceived Will to persist locally in its state of growth and penetration unless ob-

structed by some other Will from further progress, the only exception being that case of satisfaction of Will produced by Beauty to which we have already drawn attention.

Will, therefore, must be conceived as potentially capable of penetrating all Substance, which penetration, were it to be effective, would produce a new monotony, but one of energy without motion, and not one of motion without energy, such as Substance represents.

In practice, however, each local Will involved in a particular self is limited by very many others, so that to all local Wills a world of sense data in the organa of other Wills presents itself.

THE FINAL DUALISM:

Nevertheless, when data have been analysed to the last term, the conclusion we derive from our consideration of Method and Data is that not only Statement in its strict sense, but our whole knowledge of the universe of sense, is methodological.

The dilemma that the unique sensation cannot be descriptively known, and that the subject of description cannot be particular, still remains with us.

In the dualism of the logical and the alogical, statement can never enter into the former. Moreover, the completed general in Being, like the completed unique in sense, defies intimate analysis in description, for description consists in verifying many particulars in a general, and therefore offends both particularity and generality by passing, at some stage, out of either condition into the other. The cause of event and the miracle of existence present another aspect of the same paradox.

Thus the widest generalization which we can

achieve in Method can never exceed those limitations which the employment of Method as a means of Truth enjoins; so also the more particular knowledge of uniques, in so far as knowledge of them depends upon generalization, is also dependent upon sound method.

It is for this reason, we have seen, that our widest philosophic truth must be not only contingently true in Science, but also logically true in Method; yet, even when so much is admitted, one must confess that the ultimate satisfaction of the reason in such matters, by the very fact that it is a satisfaction, must be æsthetic and ethical and not wholly rational in character. To say, however, that a *telos* is involved in philosophic statement is not to deny the complete domain of Reason within its realm. The will to Know demands satisfaction—that is its æsthetic aspect; but the Will to know can only be stilled by adequate reason.

Armed with our present knowledge, let us endeavour to portray the world of Data as it might appear to a Knower as universal as itself.

To such a Knower, we may assume the antithesis between conceptual and sensational knowledge to have been solved; his words, that is, would be actual and his ideas co-extensive with his sensation. We may conceive such a Knower to perceive (and conceive) the great uniformity of Substance and to note therein the play of Will.

To such a Knower, at the outset, but one observable element would be present, that of persistent duration, for as he knew Substance, so would Substance continue.

At this stage the second element of Being, that of Will, would be seen to operate; the uniformity

of the Substance would display a vibrant capacity, which, in its tendency to centralize itself, would lead our cosmic Knower to believe that such vibration had come not from within Substance itself, but as the result of an influence bearing upon it —an influence not yet sufficiently established to produce locality, but one nevertheless disquieting to the original homogeneity. In other words, this cosmic Knower would find himself confronted with Ether, and he would realize how homogeneous Substance had been transformed into Ether by the introduction of a disturbing element—Will.

Next he would observe the self-stimulation of the Vibrant parts—he would observe the rise of the vortex and the self-contained etheric ring; locality as well as persistence would arise in the sub-atom, and he would perceive, as there was no new Substance present, nor any Ether or Sub-atom that was not previously present, that the external causeless element Will had still further disturbed the primal homogeneity.

We need scarcely trace the growth of complexity which the cosmic Knower would in season observe: the passage from the unstable whirl to the ordered orbit and from the orbital to the solid contactual have been traced in earlier chapters; but about this time would become observable that interference of one organon with another which was already incipient at the etheric stage.

Gradually he would perceive large portions of the cosmos to become organized, until finally the sensitive organon of vital matter would make its appearance.

From thence to the self-conscious would be but a step; by this time, obstruction of other organa and their mutual capacity for good or evil would

have become manifest. With speech, he would see these capacities expressed as molecular obstruction in sound, symbolic of expectation, and idea. Finally, Thought would arise, itself symbolic, and with Thought the desire to understand not only immediate obstructions, but their qualities and the whole universe. At this stage the third element of Being, the local Knower, would come under observation; he would see how the world presented to each consciousness appeared as Thing, and how each part of such a world was itself a Knower more or less developed, so that Knower and Thing became subjective and objective aspects of the same condition.

Finally, therefore, he would find himself with three elements—Substance, Will, and the community of Knowers—out of which to fashion Totality.

Such is the position to which we likewise have endeavoured to bring ourselves.

Of the three non-causal elements of Being which cannot be known within the time-space process, the Knower is the most closely related to the known world of contingent data. The double aspects of the Knower as Being and as contingent have already been remarked upon, and it must be observed that, unlike Substance, which is devoid of Will, and Will, which is other than Substance, the Knower has in his essence elements, both of Will and Substance, with which he is associated in his particular organon.

The operation of Will on Substance is to differentiate the protyle into organa possessing Locality and Duration, and such a differentiation produces in Substance organization, and in the organization arises the local Knower.

We have had reason to suppose that in the first

tentative attempt at organization, local grouping in Substance manifests itself prior to the establishment of a permanent local Self in local will. Local Will, figuring in the simpler stages as the unself-conscious self and finally as Knower and social community of Knowers, is thus strictly a result of the penetration of Cosmic Will in Substance; that is, by operation of Will, Substance differentiates, and through that differentiation appears that local will or Knower which is associated with the local organa so created.

Local Will or the Knower is thus, in essence, Cosmic Will locally curtailed by Substance. We know that the Will of all organa is similar in kind, and that local will is outside the time process, differing only in degree according to the particular organon of Substance with which it is associated. Though the Knower is in Being we are able to eliminate the Knower from our final examination and assert that, in the last resort, but two radicals, Substance and Will, exist in Being, whose interrelation produces Totality.

If one conclusion has stood out more clearly than another in this work, it is that all our judgments, though based upon unique sense data, are conceptual, explanatory, and methodological.

Thus, in the end, no matter how searching be our enquiry, we must, if our final statement has meaning, be left with a verbal relation—a relation which has found expression in the terms "Substance" and "Will."

We are faced thus with this dilemma, that if we attempt the resolution of our final relation we may be left with a statement which is meaningless, whereas if we avoid it we shall, at the end, have to confess to an imperfect Ontology.

It may be said that the need for relation lies primarily in Method and not in Data, since the whole process of relation is a mental symbolic one, and that, consequently, although we are unable to avoid relation in thought, we may yet assert that in Being there is no necessity for relation.

Such an assertion, however, lacks the force of metaphysical statement in that, although it possesses contingent truth, it offends against the logical necessity of verbal relation, for, to be metaphysical, assertion must be necessary as well as contingent, so that, at the end, we find ourselves left with the two notions of Being: Will and Substance; nor can we, within our necessary dualism, resolve them.

The religious identification of the immanent and transcendent God is an attempt to resolve the final dualism of metaphysic, and such a solution, whether it yield æsthetic or ethical satisfaction or not, can scarcely hope to satisfy the intellectual emotion. Nor is the scientific monism of Häckel more fruitful.

Finally, therefore, arises the problem whether we shall find our supreme satisfaction in the æsthetic, ethical, or rational solution; the lovers of Metaphysic have committed themselves at the outset of their service to their answer.

Thus the method of philosophy is one of relation, while the subject of philosophy is the unique unrelationed. Here, then, we are confronted with that final antinomy which frustrates further progress. In the last analysis we have to confess that the relationing reason is incompetent by its very process to resolve the final dualism.

This recognition is in itself a recognition of the precedence of Data to Method, of the alogical to

the logical. So that at the last we are left with an alogical Being into which Knowledge by its very nature is unable to enter. The most, therefore, that an Ontology can hope to accomplish is to designate the Being of the final unrelatable elements, and to that purpose this essay has been devoted.

KNOWLEDGE AND BEING:

It is obvious that the final justification of Ontology must depend upon the assertion of Being beyond Knowledge. If such Being can be affirmed, it can only be because it is possible to recognize its existence in the absence of all Knowers.

That a recognition of Being is only reached by us through Knowledge is not denied, but what distinguishes Being from Knowledge is that the latter, by its very nature, must be presented to a Knower, whereas the former, though the object of Knowledge, is likewise self-sufficient.

It is clear that, in so far as Being as object falls within the subject Knowledge of which it is the predicate, to that extent it is within Knowledge; but to say this is to assert no more than that every subject and object of statement interpenetrate, a conclusion we arrived at while Method was under discussion.

The Knowledge we possess, both by observation of Event and the study of Thought, forces us, within Knowledge, to a mental recognition of Being beyond it.

Yet, just because such Being can only be affirmed in terms of Knowledge, the limitations of Knowledge curtail the full assertion of Being; Being must figure in the last resort as relative and dual, not because it is so in reality, but because in Knowledge we cannot appreciate it otherwise.

Thus when philosophers affirm that we cannot transcend our Knowledge, they may be correct if they are using the phrase merely in the sense that Being can only be known conceptually, but their doctrine is unsound if they draw the further inference that, because Being is only to be predicated through Knowledge, the assertion of Being beyond Knowledge is absurd.

It is extraordinary, with the example of mathematical infinity before them, itself incomputable, not to speak of the theological assertion of God, that so many metaphysicians should have sought to thrust the Totality of Being into the Spanish boots of Knowledge. We know Being beyond Knowledge as unknowable, and in that very process affirm its transcendency.

Yet, in as much as Being can only be appreciated in Knowledge, so Ontology cannot arrogate to itself the consolations of finality. However deeply we may probe at the mystery of Being, we shall be committing a gross philosophic solecism if, at the end, we regard our conclusions as anything but tentative. In the enthusiasm of discovery the limitation of reason and the infirmities of our own temperament should alike be remembered—with our last word we shall not be accused of flippancy if, at times, we are tempted to affirm with Peacock that

> All philosophers who find
> Some favourite system to their mind,
> In every point, to make it fit,
> Will force all nature to submit.

INDEX

Absolute, 81, 82
Accident, 27, 64, 68
Adjectival Noun, 28, 29
Adjective, 26–28
  detached essence of a complex, 27
  function of, 30
  involves causation, 28
  potential symbol of Event, 26
Adverb, 22–26
  and activity, 22
  function of, 30
  kinetic symbol of Event, 27
  of Manner, 22, 24
  of Quality, 26
  of Quantity, 26
  and active verb, 22
Anaximenes, 92
Animals, 68
Animism, 86, 107
  scientific, 132
Apes, 71
Aristotle, 92
Assertion, 33
  economy of, 140, 144
Assumption, 25
Atom, 112–13
  as self, 113
Atomic law, 113
Attribute, 45

Beautiful, the, 188
Being, 81–83, 86, 88, 93, 98, 127–93, 197, 204, 213
  and Knowledge, 219–20
Bergson, 95, 175, 202
Blastæads, 118

Cantor, 93
Categories of Kant, 93
Causation, 23, 28, 125
Cell, 116–21, 177–80
Change—
  Causal and miraculous, 23–4
  Time and Space, 23–4
Concept, 45–52, 104
  perceptual, 58
  unperceptual, 58, 109, 110
Consciousness, 66
Contiguity, 50
Curiosity, 42

Data, 103–26, 207–13
Dewey, 92, 94
Diogenes, 91
Divine Being, 141, 218, 220
Dualism ultimate, 65
Duration, 42, 177, 188, 202, 209

Einstein, 93
Eleatics, 92
Empirical Statement, 33–8
Energy, 132
Essence, 20, 23, 27, 63
Ether, 64, 115, 123, 130, 168
  as ultimate genus, 51
Exclamation, 29
Experience—
  basis of Knowledge, 102
  elements of, 40
  and memory, 40
  and self, 40
  and will, 41

Experiments with animals, 68
Evil, 84
Evolution, 68, 132

Faith and Philosophy, 83
Fish, 121
Formal Statement, 61–78

Gastræads, 119
Genesis, 87
Ghost, 87
Good, the, 121, 190

Häckel, 218
Heraclitus, 92
Hobhouse, 67
How, the, 24, 201

Imagination, 59, 76
Instinct, 67
Intellection, 46–54
Interjection, 29
Ionians, 91, 96

James, 92, 94, 99
Judgment, 33

Kant, 93, 97, 136, 139
Knower, the, 164–93, 200, 216, 217
  and Knowledge, 79, 153
  evolution of, 167
  tripartite, 182
  and Will, 185–8
Knowledge, 103
  and Being, 219, 220
  of General and Particular, 18
  and Knower, 79, 153

Language, 44, 68, 154–8
  association in, 45
  imitation and, 44
  onomatopæic, 71
Life, evolution of, 41
Locality, 177, 188, 208–9
Locke, 96
Logic, 72–6
Lorentz, 93

Mahommedanism, 89
Mammalia, 121, 122
Mass, 132
Mathematics, 73, 75
Matter, 105
Memory, 40, 42
Metaphysic, 80, 97
Metaphysical Statement, 81–100
  and Being, 81
  Validity in, 80
Method, 11–100, 200–7
  and data, 97, 98
Mind in Evolution, 68
Miraculous, the, 23, 24
Molecule, the, 105, 110–12, 177
Monotheism, 87–8
Moreads, 118

Nationality, 185
Nominalism, 47
Noumenon, 136
Noun, 16–18
  adjectival, 28, 29
  general, 17, 18
  as name of Thing, 17
  particular, 17, 18
  potential, 26
  theoretical, 30

Ontology, 219, 220
  primitive, 85

Parmenides, 92
Particles, 29, 30
Personality, 54–59
  non-causal, 39
  rise of, 39
Phenomena, 139
Philosophy—
  emotion in, 99
  and faith, 83
  intuitive, 14
  rational, 13
  and Reality, 13
  verbal, 79
Pictorial Image and Thought, 77
Pierce, 92
Plato, 13, 92
Platodes, 119

Poincaré, 93
Polytheism, 87
Pragmatism, 92, 93
Proof, 25
Pronouns, 29–30
Pythagoras, 92

Reality, 83
Reason, 14
Relation, 48, 93
Religious Truth, 83-90
Rhythm, 169
Russell, Bertrand, 93, 139

Schiller, 92
Science—
  function of, 46, 59
  limitation of, 59
  researches of, 106
Self, 46, 204, 205
  Sub-atom as, 170–3
  Atom as, 173–5
  Molecule as, 175–7
  Cell as, 177–80
Sense data, 62, 76, 105, 108–9
Sensual statements, 32–60
Sex, 43, 44
Social good, 183–6
Society, 43
Socrates, 92
Solipsism, 81
Space, involved in the causal, 25
  and Time, 24, 92, 210
Species, 51
Spencer, Herbert, 100, 132
Spinoza, 136
Statement, 32, 33, 35, 61, 81
  Empirical, 33–38
  Formal, 36, 61–78
  Metaphysical, 79–100, 203
  Religious, 83–90
  Theoretical, 38–46
Sub-atom, 114, 115, 170–173
Substance, 129–143
  as Being, 82, 199, 211, 215, 216
  contingent, 131–4
  necessary, 134–6
  as noumenon, 136–8
Substance (*continued*)—
  as phenomenon, 138–40
  as word of Being, 143
Syllogism, 49

Thales, 91
Things, 149, 150
  in Themselves, 79, 136
Thought, 56, 59, 61, 62, 66–9, 76
  necessities of, 69–72
  pictorial image in, 77
Time, 93, 95
  and the causal, 24
  and Space, 24, 92, 210
Totality, 78, 80
Totem, 87
Truth, 205
  coherent, 96
  contingent, 63, 93
  correspondent, 96
  metaphysical, 90–8
  necessary, 62, 63

Ultimate attributes, 52
Universal, 25
Unperceptual Concept, 58, 108–10

Validity, 33, 80, 90
Verb, 19–22
  active, 21, 22
  and adverbs, 23
  constructive, 19
  copulative, 19, 21
  definitive, 20
  functions of, 19, 30
  and noun, 19
  repetitive, 19
  symbol of Event, 26
  and Will, 145
Verbalism, 88
  Chinese, 89
  Egyptian, 88
  Jewish, 89
  Mahommedan, 89
  modern, 89

Why, the, 24, 201

Will, 144–63
as Being, 143, 144, 199, 211, 215, 216
contingent, 146–51
growth of, 41, 147
as Inertia, 148, 159
and Knower, 145
and the logical, 151–9
necessary, 159–61
in organa, 147
spontaneous, 41
Will (*continued*)—
and the verb, 145
as word of Being, 143, 144
Words, 11–31
æsthetic qualities of, 15
in combination, 32
emotional effects of, 15, 16
ethical qualities of, 15

Zeno, 92

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